DOCUMENT RESUME

ED 286 058 CE 048 389

AUTHOR	Parkinson, Kevin J.
TITLE	The Delivery of TAFE Services to People in Remote Areas--A Case Study with Generalisations.
INSTITUTION	TAFE National Centre for Research and Development, Payneham (Australia).
REPORT NO	ISBN-0-86397-034-6
PUB DATE	87
NOTE	200p.
AVAILABLE FROM	Nelson Wadsworth, P.O. Box 4725, Melbourne, Victoria, 3001, Australia.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	*Adult Education; Case Studies; *Delivery Systems; Demography; *Distance Education; Educational Needs; Educational Television; Enrollment Rate; Foreign Countries; Home Programs; Information Networks; Labor Force; Labor Market; *Mobile Educational Services; Postsecondary Education; Rural Areas; *Rural Education; Telecommunications; *Telecourses
IDENTIFIERS	*Australia; TAFE (Australia)

ABSTRACT

A study examined ways in which Technical and Further Education (TAFE) services might be delivered to persons living in outlying areas of Australia. The study concentrated on the tristate area served by the Broken Hill, Riverland, and Sunraysia colleges. The following means of providing TAFE services were studied: self-study centers, residential facilities at TAFE colleges, branch campuses at centers away from a principal college campus, mobile teaching units, distance education, telecommunication links, and radio and television (including satellite transmission). The study resulted in series of recommendations pertaining to 14 aspects of improving services to residents of remote areas. It was concluded that (1) for purposes of providing TAFE services, the three colleges studied should be treated as a single unit; (2) an area council be established to oversee a rolling triennial plan for TAFE services in the tristate area; and (3) tertiary counseling and credit transfer information services should be established. It was also recommended that cooperation regarding the use of college facilities be expanded, study centers be established, distance education services be expanded, and telematics be given greater emphasis. (Appendixes contain data on course provision and enrollments, additional statistical information, lists of some possibilities for tele-education with equipment required for networking and courses available through external studies, a statement of the duties of a radio education officer, and the budget of the Northern Territory External Studies Centre. A 15-page bibliography is also included.) (MN)

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TAFE

TAFE NATIONAL CENTRE FOR
RESEARCH AND DEVELOPMENT

THE DELIVERY OF TAFE SERVICES TO PEOPLE IN REMOTE AREAS — A CASE STUDY WITH GENERALISATIONS

K. J. PARKINSON

U.S. DEPARTMENT OF EDUCATION
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© TAFE National Centre for Research
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ISBN 0 86397 034 6 (Hard Copy)
TD/TNC 14.3

Typed by: Giulia Reveruzzi
Edited by: Anne Bastian

Published by:

TAFE National Centre for
Research and Development
296 Payneham Road
Payneham SA 5070

(Incorporated in South Australia)

Distributed by Nelson Wadsworth, PO Box 4725, Melbourne VIC 3001,
for TAFE National Centre for Research and Development Ltd.

Printed by D. J. WOOLMAN, Government Printer, South Australia

FOREWORD

This project was undertaken by the TAFE National Centre for Research and Development in response to a request from the TAFE Tri-State Consultative Committee. The request was for a project designed to collate and analyse a collection of materials on mobile teaching units and to develop a proposal for mobile teaching units to meet needs of the hinterland of the TAFE colleges at Broken Hill, New South Wales, Mildura, Victoria and Renmark, South Australia (i.e. the tri-state area).

It was suggested by the Centre that to focus on the use of mobile workshops alone in serving the people of one particular area of Australia was too narrow a brief. Accordingly it was agreed to undertake an evaluation of the existing provision of education services to the hinterland of the colleges concerned and if necessary, to recommend on the best means of improving such services including the use of mobile teaching facilities.

It was agreed that any recommendations, although directed to a particular geographical area of Australia, had implications for people living in remote areas right across Australia. The examination of these implications is therefore part of the project.

This project has three principal target audiences:

- the members of the TAFE Tri-State Consultative Committee as a basis for the development of their coordinated remote areas programme.
- the three state TAFE Authorities as a basis for the allocation of resources to the area.
- the wider TAFE community including the Commonwealth Tertiary Education Commission [CTEC] so that they may be informed of the possibilities of providing TAFE services to people living in remote areas across Australia.

A number of people have helped in the compilation of this report and to all the grateful thanks of the author is extended. In particular the assistance of the following is acknowledged:

- the members of the Advisory Committee the names of whom are listed elsewhere;
- the many citizens of the tri-state area who were prepared to give their time to advise the author on TAFE needs.

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DEFINITIONS AND ABBREVIATIONS

TAFE	Post-school education other than that offered by universities, institutes of advanced education, private colleges and other voluntary providers of education (Lavender & Findlay, 1984, quoted by Parkinson, 1986 p.131)
TAFE Authority	The state or territory authority responsible for the conduct of TAFE. (JCTS, 1985, quoted by Parkinson, 1986, p.132). The authorities in the tri-state area are: New South Wales, Department of Technical and Further Education; Victoria, Technical and Further Education Board; South Australia, Department of Technical and Further Education
Distance education	Education provided when students and teachers are not in face-to-face contact but communicate with each other by such means as correspondence, radio and television (Lavender & Findlay, 1984, quoted by Parkinson, 1986, p.48) Correspondence education and external education are considered synonomous with this term
Off-campus education	Instructional activities designed for people outside their usual student body. May include evening classes, short courses, exhibits, tele-courses, correspondence courses and seminars. (Lavender & Findlay, 1986, quoted by Parkinson, 1986, p.60)

Telematics	A generic term for all electronically based communication systems e.g. recorded and broadcast audio and video, computers, videotex, telephones and satellites. (VTOCN, 1984, quoted by Parkinson, 1986, p.143)
Pre-employment course	Course providing individuals with skills and knowledge to prepare them for employment in the work force (Broderick, 1982, quoted by Parkinson, 1986, p.99)
Pre-vocational course	An exploratory programme designed especially to permit people to learn the nature of particular kinds of work and their aptitudes and interests in them (Parkinson, 1986, p.100)
AFAS	Australian Flying Art School
CEP	Country Education Project
CES	Commonwealth Employment Service
CPSG	Curriculum Projects Steering Group
CTEC	Commonwealth Tertiary Education Commission
ECCTIS	Education Counselling and Credit Transfer Information Service
EPAC	Economic Planning Advisory Council
ESSC	Evaluative Studies Steering Committee
GOYA	Group One Year Apprentice Training Scheme
HACBSS	Homestead and Community Broadcasting Satellite Service
HF	High Frequency
KNOW	Knowledge Network of the West
MADEC	Mildura and District Education Centre
NCSS	National Communications Satellite System
SACOTAFE	South Australian Council of TAFE
TAFE	Technical and Further Education
UFSO of SA	United Farmers and Stockowners of South Australia
UVP	Unified Vocational Preparation
VTOCN	Victorian TAFE Off-Campus Network
WAPSEC	Western Australian Post Secondary Education Commission

ADVISORY COMMITTEE

F. W. Lyons, Director, Sunraysia College of TAFE

R. B. Williams, Principal, Riverland College of TAFE

Ian Fraser, Principal, Broken Hill College of TAFE

Peter Sixsmith, Principal, Deniliquin College of TAFE

Malcolm Snell, Project Officer, Physical Resources Branch, Department of Technical and Further Education, South Australia

Jack Foks, Head, Victorian TAFE Off-Campus Network Coordinating Authority

Peter Clarke, Regional Administrative Officer, Orana Community College, Dubbo.

EXECUTIVE SUMMARY

Australia is a vast nation in which many people live in places which are so small that the provision of TAFE facilities is uneconomic and which are so remote from existing facilities that access to them is very difficult, if not impossible.

This study is concerned with ways in which TAFE services might be delivered to these people. It concentrates on the Tri-state area served by the Broken Hill, Riverland and Sunraysia Colleges, but the implications of the findings are extended to the whole of Australia.

This study examines the following means of providing services to people living in remote areas.

- self-study centres;
- residential facilities at TAFE colleges;
- branch classes at centres away from a principal college campus;
- mobile teaching units;
- distance education;
- tele-communication links;
- radio and television transmission (including the use of satellites).

As a consequence of the study, a number of recommendations is made.

It must be understood that these recommendations do not suggest that the freedom of any of the colleges to provide short courses on demand should be restricted.

It is recommended that:

1. GENERAL

1.1 The areas served by the TAFE colleges at Broken Hill, Mildura and the towns of the Riverland regions of South Australia should, for the purposes of delivery of TAFE, be treated as a single unit (p.71).

1.2 A single multi-campus tri-state TAFE institution be established under a principal who would report to an area council made up of representatives of each constituent college council and set up under the authority of the state TAFE administrations and to whom the principals of the three constituent TAFE colleges in the area would be responsible (p.72).

1.3 For the purposes of delivery of TAFE programmes, the procedures adopted should be:

a) the development by the area council of a rolling triennial plan for the area. This report should form the basis for the first plan.

b) the inclusion in the plan of the following details:

- . the existing programmes to be maintained and the associated costs;
- . the programmes to be initiated or varied together with the proposed location and the associated costs for capital works, equipment and staffing;
- . a dissection of the funds sought from the three state TAFE authorities.

c) after the endorsement of the plan in each college, through the normal procedures of that college, the plan should be forwarded to each state TAFE authority for approval.

d) after the plan, with any amendments arising from consequent discussions, has been approved by the state TAFE authorities, it should be implemented by the principal of the multi-campus tri-state TAFE institution.

e) the overall monitoring of the implementation of the plan should be the responsibility of the principal in consultation with the area council (p.72).

2. LICENSING OF TRADESPEOPLE

2.1 Reciprocal licensing of tradespeople across the states be sought (p.4).

2.2 If this cannot be achieved, a register of interstate apprentice courses approved for licensing be prepared for each state or territory together with details of the extra requirements in those cases where licensing is not automatic (p.4).

2.3 If Australian tertiary counselling and credit transfer information services are established, the proposed register of interstate apprentice courses be part of those services (p.5).

3. MEETING OF GAPS BY COOPERATION IN THE USE OF CURRENT (INCLUDING PLANNED) COLLEGE FACILITIES (INCLUDING RESIDENTIAL)

3.1 The farm at Sunraysia College provide for the gaps in the primary industry training needs of the area (p.74).

3.2 An elective for greenkeepers be introduced into the apprentice course for gardeners at the Sunraysia College of TAFE (p.74).

3.3 The offer of Berrivale Canneries for the provision of industrial facilities for training in the packaging and presentation of citrus be investigated (p.74).

3.4 The Winery Cellar Procedures Certificate continue to be offered jointly by the Riverland and Sunraysia Colleges of TAFE to serve the whole area (p.74).

3.5 The current use of industrial facilities be continued and that no new educational facilities be provided for courses using those industrial facilities (p.74).

3.6 Second and third year automotive apprentices in the Riverland region attend the Sunraysia College of TAFE (p.74).

3.7 The existing course for plant operators conducted at Sunraysia College of TAFE serve the whole area (p.74).

3.8 Carpentry and joinery apprentices in the Riverland region be trained at Sunraysia College of TAFE (p.75).

3.9 The existing training in painting, decorating and signwriting currently provided at Broken Hill College of TAFE serve the whole area (p.75).

3.10 Electrical apprentices in the Riverland region be trained at the Sunraysia College of TAFE (p.75).

3.11 The electronics facility at Sunraysia College be used for instruction in instrumentation for the whole area (p.75).

3.12 Second and third year fitting and machining and welding apprentices in the Riverland region attend the Sunraysia College of TAFE (p.75).

3.13 The existing training in boilermaking provided at the Broken Hill College of TAFE serve the whole area (p.75).

3.14 The resources at Sunraysia College be used for all trade and higher level programmes in tourism and hospitality except the existing Home Economics Certificate and Home and Food Service courses at Broken Hill and for courses in club management which also should be provided at Broken Hill (p.76).

3.15 The college section for the training of enrolled nurses should be undertaken by each of Broken Hill, Riverland and Sunraysia Colleges of TAFE (p.76).

3.16 Courses in animal care should be conducted at the Sunraysia College of TAFE (p.76).

3.17 Courses in library studies be conducted at the Sunraysia College of TAFE (p.77).

3.18 A Certificate in Child Care Studies be provided at the Sunraysia College of TAFE to serve the whole area and the existing child-minding facilities be used for that purpose (p.77).

3.19 Aboriginal people have the opportunity for separate instruction until they gain sufficient confidence to join integrated courses (p.77).

4. MEETING THE GAPS BY THE PROVISION OF NEW FACILITIES

4.1 The facilities for hairdressing proposed for the Riverland College should serve the whole area (p.79).

4.2 The equipment for plant mechanics at Broken Hill should provide training for the whole area (p.80).

4.3 A facility to serve the whole area for training in distributive services (retailing) should be provided at Sunraysia College of TAFE (p.80).

4.4 A course equivalent to the Health and Care Certificate provided by the South Australian Department of TAFE be offered at each college in the area and suitable facilities be provided where necessary (p.80).

4.5 Sufficient places for 100 full-time equivalent students in business and secretarial studies be provided at both Sunraysia and Riverland colleges of TAFE (p.81).

5. COORDINATION OF PROGRAMMES FOR PEOPLE LIVING REMOTE FROM COLLEGE CAMPUS

5.1 Each college appoint to the staff an off-campus programme coordinator to organise the provision of TAFE services to people in remote locations or who, for some other reasons, are unable or unwilling to attend classes (p.81).

5.2 These coordinators meet regularly under the direction of the principal of the multi-campus tri-state TAFE institution to ensure that the total provision in the area is made in a rational and economic way (p.82).

5.3 The recommendation (Parkinson et al, 1986) that the TAFE National Centre for Research and Development be commissioned by the Evaluative Studies Steering Committee (ESSC) of the CTEC to undertake a study of the feasibility of setting up Australian tertiary counselling and credit information services be supported (p.82).

6. MEETING THE GAPS BY STUDY CENTRES

6.1 A study centre be established at Deniliquin College of TAFE (p.82).

6.2 The services and facilities of the study centres should be funded so that they might be developed along the lines of the Northern Territory External Studies Centre (Advanced Education) (p.82).

6.3 The Sunraysia College become a resource base connected to the proposed Victorian education telecommunications network (p.97).

6.4 The other study centres at Riverland (Berri), Broken Hill (Robinson Centre) and Deniliquin become resource and communications nodes within the system (p.97).

6.5 Each of the study centres be equipped with an electronic classroom (p.95).

7. MEETING THE GAPS BY RESIDENTIAL FACILITIES

7.1 The possibilities of developing a series of short courses designed exclusively for residential students be investigated (p.84).

8. MEETING THE GAPS WITH BRANCH CLASSES

8.1 Branch committees consisting of local people be set up in each centre where branch classes might be provided (p.85).

8.2 A local contact person who would liaise with the providing college be appointed in each centre (p.85).

8.3 The function of branch committees be to advise the college off-campus programme co-ordinator through the local contact person of any matter relating to TAFE in the local community (p.85).

8.4 Itinerant staff who are organised by the college off-campus programme co-ordinators be available to meet the needs of branch classes where local expertise is not available (p.86).

9. MEETING THE GAPS BY MOBILE CLASSROOMS

9.1 Mobile facilities should be developed as sources of power and to store equipment (p.86).

9.2 Separate mobile classrooms be fitted out for each type of programme to be offered (p.87).

9.3 The units be on circuit across the whole area serving as nearly as possible the needs of a particular remote locality before moving on (p.88).

9.4 Five additional units to those available already be provided--welding and metal fabrication, rural studies, basic farm maintenance, basic home maintenance and computing (p.87).

10. MEETING THE GAPS BY DISTANCE EDUCATION

10.1 TAFE students in the study area be able to enrol in the distance education institution of their choice regardless of state boundaries (p.88).

10.2 A radio curriculum officer be appointed to work with the School of the Air in Broken Hill in order to provide suitable vocational programmes to people in the service area of the school (p.91).

11. MEETING THE GAPS WITH RECENT DEVELOPMENTS IN THE USE OF TELEMATICS

11.1 The recommendation of the Victorian State Working Party on Telecommunications Networking for Tertiary Education for the tri-state area be supported. The recommendation concerned is that a telecommunications network which incorporates both satellite and terrestial distribution methods and which will enable the use of educational resources of a range of city-based institutions be established to meet the needs of the tri-state area (p.96).

11.2 If phasing is necessary, the phasing be technical rather than geographic (p.100).

12. HIGHER EDUCATION

12.1 The higher education study centre conducted by MADEC in Mildura be moved to form part of the Sunraysia College of TAFE (p.101).

12.2 The study centres be administered as part of the multi-campus tri-state TAFE institution along specified guidelines with the details being worked out in consultation with the TAFE central administration, the appropriate higher education coordinating authority and CTEC (p.101).

12.3 The possibilities of extending the provision of higher education courses by contract through TAFE colleges in the area be investigated (p.102).

12.4 The possibility of providing modules of the Bachelor of Applied Science in Food Technology from the Hawkesbury Agriculture College by contract through a TAFE college be investigated (p.102).

12.5 The contracting arrangements being discussed with higher education institutions by Sunraysia College of TAFE be entended to include training in primary and secondary teaching (p.102).

12.6 Courses for registered nurses be contracted through the Broken Hill and Sunraysia colleges and training hospitals under the supervision of Mitchell and Ballarat CAEs respectively (p.103).

13. PUBLICITY

13.1 Each college in the area have the facility to promote TAFE in its own region and that this be the responsibility of the off-campus programme coordinators (p.48).

14. THE WIDER CONTEXT

14.1 Each state and territory establish a task force which should be provided with resources to investigate and fund pilot developments of new delivery modes based on a decentralised, off-campus approach using new communications such as electronic classrooms and AUSSAT as well as stand alone audio, video and electronic learning resources (p.110).

14.2 Developments in the new delivery modes for distance and off-campus education be monitored and the information disseminated nationally by the TAFE National Centre for Research and Development (p.110).

14.3 The CTEC provide a new category of recurrent grant to assist with the costs of study facilities in TAFE colleges for external higher education students.

The funds be applied to establish basic bookstocks and as a contribution to overheads, including staff costs (p.118).

14.4 The CTEC, through the TAFE Council and in consultation with state TAFE authorities, conduct discussions with the Universities Council and the Colleges of Advanced Education Council with a view to developing national guidelines for the acceptance for admission and status in higher education courses of suitable and relevant TAFE courses (p.119).

14.5 TAFE cooperate with industry and commerce in making arrangements for the training of TAFE students in remote areas (p.105).

14.6 TAFE colleges form the basis for 'institutes of tertiary education' where the demand for higher education warrants it (p.120).

14.7 The Tri-State TAFE Consultative Committee approach the three state TAFE authorities with a request that the CTEC investigate the possibility of funding an institute of tertiary education in the tri-state area as a pilot for rural areas in Australia (p.120).

14.8 Where a TAFE course is similar enough, for an identical distance education course to be offered across the nation, that course be developed through only one TAFE distance education institution (p.107).

14.9 TAFE students be free to enrol in the TAFE distance education institution of their choice (p.107).

14.10 New developments in the use of telematics in distance education be cohesive and complementary between the states (p.110).

14.11 Distance education courses use a variety of media. The criteria for the selection of media should include their relevance to the student client group and the language and literacy formats which meet the cultural, social and economic backgrounds of the group (p.108).

14.12 The emphasis for the further development of audio-based distance education material be on non-broadcast media (p.107).

14.13 Investigation be made of the potential for expanded use of the telephone for students in remote areas for:

a) individual tutoring (i.e. one-to-one exchange between student and tutor;

b) teleconferencing via loudspeaker telephone in regional or neighbourhood centres;

c) teleconferencing via conference hookup for group tutoring of learners who are geographically dispersed (p.111).

14.14 A staff development programme be conducted to prepare staff to use the telephone effectively in distance education (p.112).

14.15 Use be made in distance education of interactive television broadcasting using teleconferencing for the audio interaction (p.112).

1. INTRODUCTION

Australia is a nation where there will be always people who would wish to benefit from TAFE courses, but who live in small communities which are unable to support permanent TAFE facilities and which are too far from such facilities for the potential student to use them. Access is a primary problem for these people.

Three principal methods have been used in servicing these people:

the provision of external studies;
the provision of residential facilities at well-equipped TAFE colleges;
the use of mobile workshops.

1.1 The nature of the project

This project examines the adequacy of the existing level of provision of TAFE services to the hinterland area served by the TAFE colleges at Broken Hill, Mildura and the Riverland towns in South Australia. Gaps between current provision and needs are also identified.

[The region served by Deniliquin College of TAFE was also included in the study area as it served that part of New South Wales in the Sunraysia region. However administrative changes in New South Wales have made that part of the state the responsibility of Broken Hill College of TAFE. Moreover this study has suggested that Deniliquin is more closely related to Echuca rather than Sunraysia. Consequently, although the Deniliquin region has remained part of the study, less consideration has been given to it than to the other parts of the tri-state area.]

This area was chosen for the study because it was considered that its problems would be typical of those experienced in other remote areas of Australia. It was also chosen because there is a clear appreciation in this particular area of the need to improve the level of consultation and cooperation between the various TAFE providers in order to make the most use of resources. This appreciation was reflected in comments made by the South Australian Minister for Employment and Further Education who said that there must be cooperation between states where, as in the Sunraysia area, state boundaries belie geography (Arnold, 1986) and in the formation of the TAFE Tri-state Consultative Committee which consists of the principals of the three colleges - Broken Hill, Riverland and Sunraysia. But this area is not the only one where interstate cooperation may be possible. For example, Arnold (1986) saw existing opportunities for tripartite state cooperation between the Northern Territory, Western Australia and South Australia.

The means of provision of TAFE which are considered in this report are:

courses which are on campus at the headquarters of the four colleges, and which are designed for non-residential students.

courses which are on campus at the headquarters of the four colleges, and, which are designed for students using residential facilities.

courses at the branch locations of the four colleges. In New South Wales the term used to describe this arrangement is 'circuit classes', while in Victoria the term used is 'outreach'. The South Australian term 'branch classes' is used in this report.

the delivery of TAFE courses to the area by mobile teaching units (rail/road);

distance education;

self-study centres;

telecommunication links (including slow-scan television and tele/video conferencing);

radio and television transmission (including the use of satellite transmission).

Rogers (1985) said that one of the reasons for failures in planning for TAFE has been the inclination to make a detailed examination of TAFE services but to pay only lip-service to the broad and extremely important societal context within which TAFE operates.

In this study, there is a detailed examination of TAFE services in the area, an analysis of the adequacy of the provision of the services and an identification of any gaps between the needs of the area and current level of provision. Recommendations are made about any additional facilities required with an estimate of the cost of these facilities.

It is recognised that in the sparsely-populated rural communities served by the four colleges, it is impossible for each to meet the needs of everyone, mainly due to the relative lack of participants and the need for specialised equipment. Although employers, for example, may see local training as desirable, it becomes uneconomic when a single college cannot generate sufficient enrolments or, if it does generate just enough to commence a course, the numbers drop away as the course proceeds so that it has to be discontinued (Eleftheriadis, 1986). However, by arranging for one college to serve the needs of all regions of the area, there may be sufficient justification for the provision of facilities. (Nice and Lyons, 1984). Moreover there is evidence that the people concerned would prefer to travel within the area rather than out of it (Seidel, 1985).

1.2 Outreach

In New South Wales the term 'outreach' is used for programmes which provide courses for groups of people who find participation in TAFE difficult or intimidating for various reasons. These reasons vary from having language problems, responsibility for young children, being aged, in poor health, geographically isolated, disabled, Aboriginal or unemployed (Sixsmith, 1986b).

Gorrie (1986) described outreach programmes as the response to requests from communities when the outreach officer is satisfied that there is some barrier to the education of that community. Students determine the type and length of course, suitable locations and teachers. There is continuous evaluation and, if students are unhappy, the course is modified. Courses are free and are funded from an allocation separate to that for mainstream courses.

1.3 Problems with the licensing of tradespeople and the training of apprentices

One of the problems which will need to be resolved when considering the cooperative provision of courses for occupations where licensing is required is that the licensing regulations vary from state to state. In fact some states require licensing in some occupations while other states do not.

For example, in New South Wales, motor mechanics, panel beaters and spray painters must be licensed with the Motor Vehicle Repair Industry Council, while in Victoria and South Australia licensing is not required for these occupations. However the New South Wales Motor Vehicle Repair Industry Council generally does accept interstate qualifications (Buckley, 1986).

In New South Wales, interstate qualifications can be accepted for licensing in plumbing, but they will not be accepted for draining and liquid petroleum gas (Barnett, 1986).

With regard to plumbing apprentices in particular, master plumbers in Deniliquin used to send apprentices to Echuca in Victoria. However, Barnett reported that with the opening of a plumbing course in a college in New England, the New South Wales Apprenticeship Commission then refused to recognise the Echuca course for licensing in New South Wales. Unfortunately the plumbing course at Echuca depended on the New South Wales students for its viability and had to be closed. The state boundary had resulted in local access to training being denied to people in two states.

This non-recognition of Victorian courses in New South Wales was also discussed by Trotter (1986). He commented that the New South Wales Government did not appear to regard Victorian qualifications as highly as its own.

In fact, the licensing situation which applies when a tradesperson moves from one state to another is still far from clear. It is generally accepted, but not necessarily always true, that state licensing authorities will accept a trade certificate in any state as a prerequisite for licensing. However, due to the different regulations which apply, tradespeople may be required to pass a separate examination for each state before registration is granted. It is therefore RECOMMENDED that reciprocal licensing of tradespeople across the states be sought. If this cannot be achieved completely, it is RECOMMENDED that a register of interstate apprentice courses approved for licensing be prepared for each state or territory together with details of any extra requirements in those cases where licensing is not automatic.

Parkinson et al, (1986) have recommended that the TAFE National Centre for Research and Development be commissioned by the Evaluative Studies Steering Committee of the CTEC to undertake a study of the feasibility of setting up Australian tertiary counselling and credit transfer information services. If such services are established, it is RECOMMENDED that the proposed register of interstate apprentice courses be part of those services.

A second problem arises from the differing state regulations applying to the training of apprentices. One aspect of this problem which was identified in this study was the difference between the states in travelling allowances for apprentices. For example farming and fruitgrowing are proclaimed apprentice trades in Victoria, but have not been proclaimed in New South Wales. Victoria will register apprentices resident in New South Wales. Such apprentices receive a travelling allowance to attend training in Victoria. However, if an apprentice registered in New South Wales trains in Victoria, no travelling allowance is payable. This creates an anomaly (Parkinson, 1986a).

This problem was commented upon by Nolte (1986b) who has carpentry and joinery apprentices registered in New South Wales commuting for training from Deniliquin to Echuca in Victoria. They receive no travelling allowance.

Victorian apprentice authorities are willing to indenture apprentices to employers who are resident in other states. Although it has been suggested that the Victorian ITC has no jurisdiction or authority to resolve problems which may arise with employers or apprentices, Smith (1986) produced documentation which showed clearly that, whether it has the power or not, the Victorian ITC does exercise jurisdiction over apprentices resident in New South Wales, but indentured under Victorian law. On the other hand the South Australian apprentice authorities take a different attitude. In this state there is controlled entry into declared vocations and apprentices who are indentured to employers who have no South Australian base are not accepted.

The TAFE Tri-state Consultative Committee has addressed these problems and has held discussions with Industrial Training Commission (ITC) representatives from each state. However, the committee reports that no discernible progress has occurred.

1.4 Principles on which recommendations are based

Overall, the recommendations for the allocation of resources are based on the following principles.

1.4.1 Flexibility

There should be the optimum degree of flexibility in the provision of TAFE, taking into account the diversity within the area and the changing nature of it and society.

The term 'flexibility' can mean a number of things to a number of people. Here the term is intended to reflect the view that decisions on the allocation of resources should be student-oriented rather than systems-oriented. In other words, the allocation of facilities and staff, the teaching practices and modes used and the curricula adopted should be based on student needs rather than what is convenient for any one of the systems involved.

In practice this flexibility will involve decisions which bring about the most effective use of funds regardless of their source. It will also require the granting of status by colleges to parallel subjects in courses provided by colleges in the other states and may even bring about the development of composite courses from subjects provided by different states.

In short, flexibility implies trust between professionals and there can be no suggestion of any inflexible approaches to accreditation and credentialling. In fact the purposes of any approach should be to remove barriers to study for which students are demonstrably capable and to avoid imposing upon students the demand to repeat studies in which they have already been successful (TAFE policy paper, 1985).

TAFE providers should assume that their interstate counterparts have assessed reliably identified skills, knowledge and, possibly, attitudes in their successful graduates, regardless of the particular structures and methods which might have been chosen to develop those qualities.

Another group of students to whom a flexible approach should be taken are those who enrol in a higher education course but find that they would prefer a TAFE course. Maximum status should be given to these students.

1.4.2 Effectiveness

The effective allocation of resources in the development and provision of TAFE should be ensured.

1.4.3 Access

Access to TAFE for all people in the region should be maximised--this means both physical and curricular access. To a large extent this project is concerned with increasing the opportunities for physical access, but, the question of increasing opportunities for admission to existing courses cannot be overlooked. Opportunities for access to bridging courses and to higher education are also discussed where appropriate.

1.4.4 Equal opportunity

Equal opportunity for disadvantaged individuals and groups should be ensured. This can be seen as having at least two dimensions.

Firstly, in terms of economics special facilities might be organised in order to provide services for specific groups, for example the young unemployed and Aboriginals.

Secondly, there is the issue of location. The majority of people in the region live in large towns where facilities of some sort are readily available. Others live in small towns where a different approach is necessary. Still others live in remote areas where yet another approach is required. Each one of these needs is addressed in this study.

1.4.5 Efficiency

TAFE providers should seek the optimum return on their investment, so, therefore, there must be a balance between educational benefit and cost. While the former is difficult to measure, education authorities must be convinced that the outcomes of their educational investment justify that investment.

1.4.6 Quality

TAFE providers should strive for the highest possible quality of delivery. In other words the effectiveness of the programme should be its justification.

1.4.7 In summary

These principles are not necessarily always compatible and in practice require compromises. Such compromises can mean unpopular and controversial decisions where for example facility may be located in one part of the area in order to serve the whole area or where one TAFE authority may provide a facility for use by other authorities. In the interests of efficiency and quality, local interests may sometimes need to be regarded as secondary to the interests of the area as a whole.

2. THE AREA

The area covers much of the sparsely populated areas of eastern South Australia, north-western Victoria and western New South Wales (See Map 1).

The principal providers and the localities which are served are:

The Riverland College of TAFE, serving Renmark, Berri, Glossop, Barmera, Waikerie, Cadell, Blanchetown, Morgan, Loxton, Browns Well, East Murray, Paringa (Map 2).

The Sunraysia College of TAFE, serving Mildura, Murrayville, Walpeup, Ouyen, Manangatang, Millewa, Nangiloc, Colignan, Robinvale, Annuello, Boundary Bend, Anabranch, Pooncarie, Swan Hill.

From 1987, all Victorian schools offering TAFE courses will be classified under either a 'college campus' or 'college cluster' model to determine their relationship with a major TAFE provider (Cathie, 1985). Swan Hill Technical School will be a campus of the multi-campus Sunraysia College but the Loddon-Mallee Regional TAFE Board is arguing that this is not in the best long-term interests of the Swan Hill Community. The region to be served by the multi-campus college is shown in Map 3 (Loddon-Mallee Regional TAFE Board, 1986a).

The Far West Region of New South Wales. Broken Hill College of TAFE serving the associated centres located at Dareton, Ivanhoe, Menindee, Tibooburra, White Cliffs, Wilcannia (Map 4).

The Deniliquin College of TAFE. Deniliquin, Balranald, Barham, Blighty, Hay, Moulamein, Wakool, Mathoura, Cummeragunga (Map 4).

The Mildura and District Educational Council (MADEC).

The Dowling House Arts and Craft, Swan Hill.

The Millewa Community Arts and Crafts.

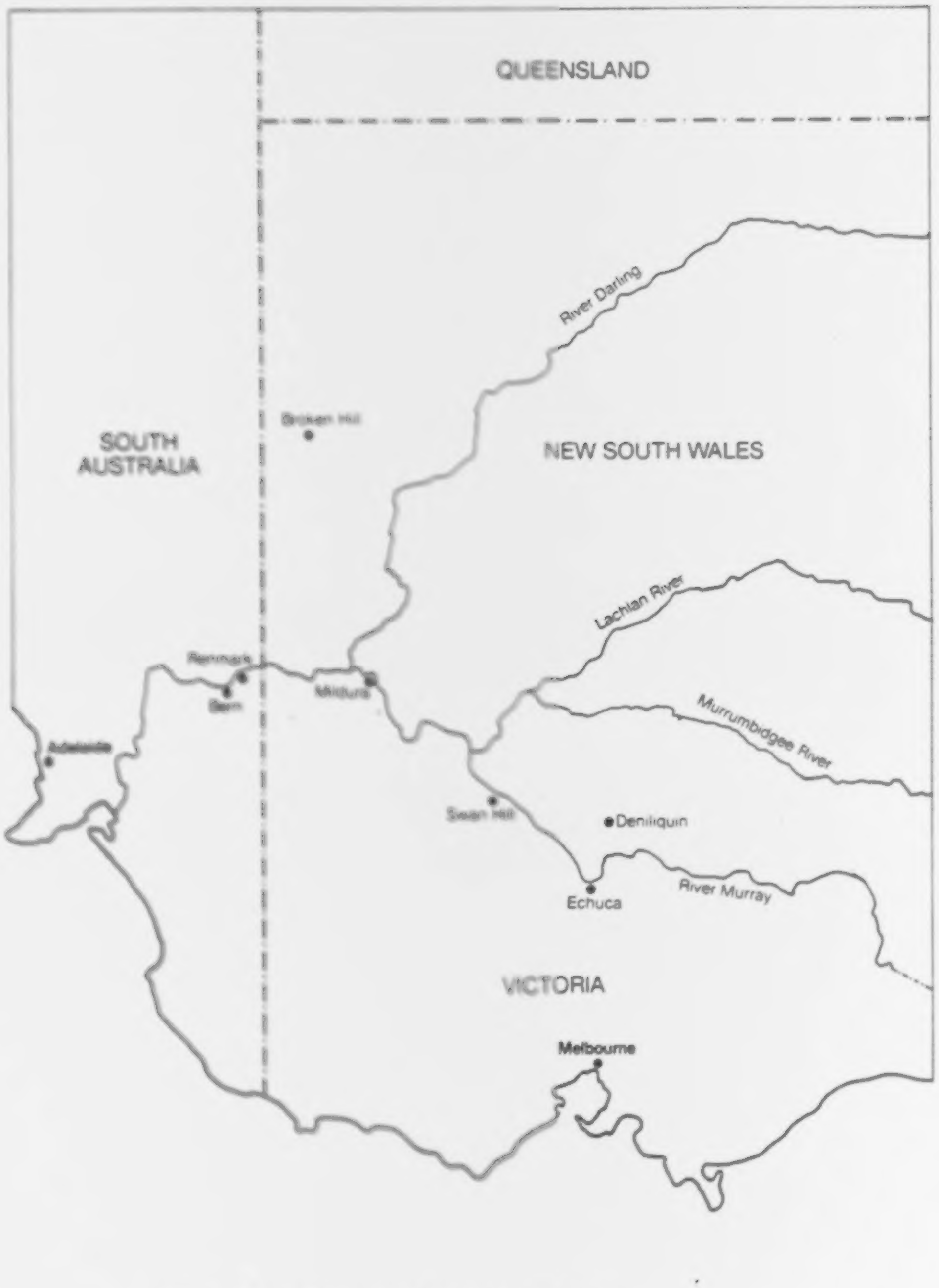
The Murrayville and District Arts and Crafts.

The Riverland Regional Cultural Trust.

The Broken Hill and District Adult Education Council.

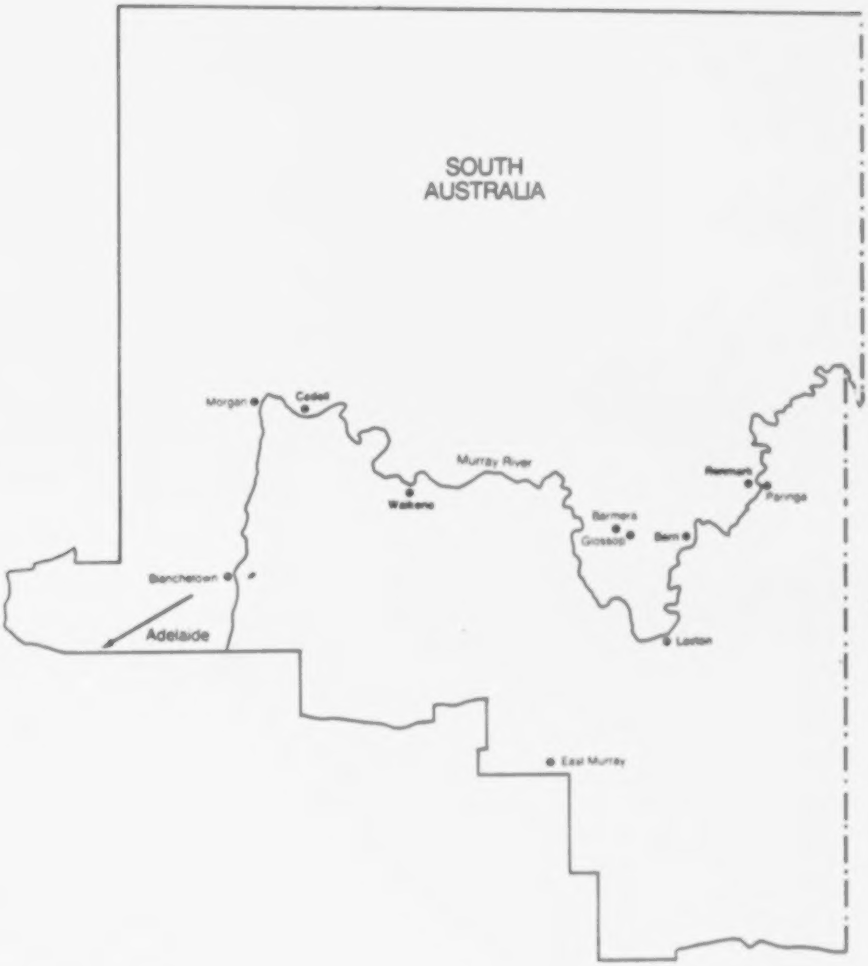
The Riverina Region Adult Education College.

THE TRI-STATE AREA


QUEENSLAND
River Darling
Broken Hill
SOUTH AUSTRALIA
NEW SOUTH WALES
Lachlan River
Renmark
Berri
Mildura
Adelaide
Murrumbidgee River
Swan Hill
Deniliquin
Echuca
River Murray
VICTORIA
Melbourne

Map 1: The tri-state area

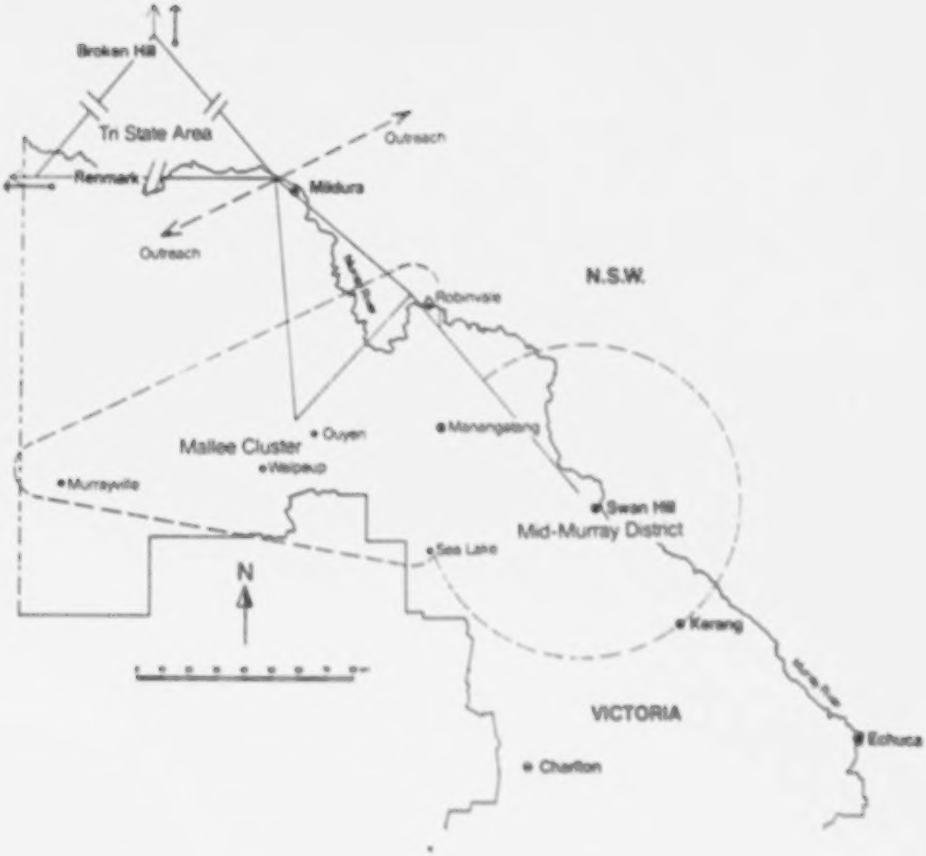
RIVERLAND REGION


SOUTH AUSTRALIA
Morgan
Cadell
Murray River
Waikerie
Renmark
Paringa
Barmera
Glossop
Berri
Blanchetown
Adelaide
Loxton
East Murray

Note: East Murray is the name of an area school in the southern part of the Loxton local government area.

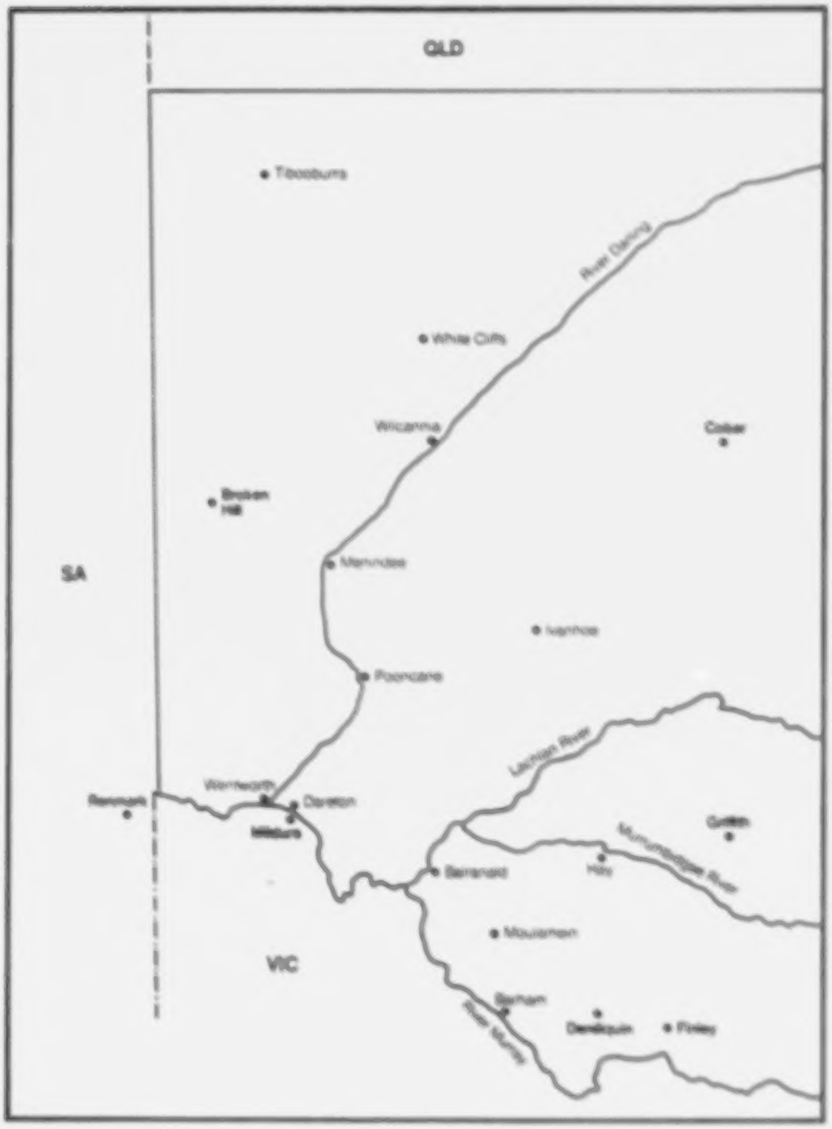
Map 2

SUNRAYSIA REGION
The proposed regional college


Broken Hill
Tri State Area
Outreach
Renmark
Mildura
Outreach
N.S.W.
Robinvale
Mallee Cluster
Ouyen
Manangatang
Walpeup
Murrayville
Swan Hill
Mid-Murray District
Sea Lake
N
Kerang
VICTORIA
Echuca
Charlton

Map 3

FAR WEST AND WESTERN RIVERINA REGIONS


QLD
Tibooburra
River Darling
White Cliffs
Wilcannia
Cobar
Broken Hill
SA
Menindee
Ivanhoe
Pooncarie
Lachlan River
Wentworth
Renmark
Dareton
Mildura
Griffith
Murrumbidgee River
Balranald
Hay
Moulamein
VIC
Barham
River Murray
Deniliquin
Finley

Map 4

3. POPULATION

The population at the 1981 census and population projections by local government areas for 1986, 1991 and 1996 for the area are shown in Table B1. Except for those projections prepared by Wolinski (1981) and Turner et al (1983), the population projections for the New South Wales section of the area do not go beyond 1988 because it is considered the populations are so small that more distant forecasting cannot be justified. The projections shown in these cases have been developed by the author.

The population over 15 years of age at the 1981 census by age by local government areas for the region are shown in Table B2.

There has been little projection work done on specific age groups of the population. However, Wolinski (1985) foresaw the present proportion of 15-19 year olds in the Sunraysia region dropping marginally from 9.28% in 1981 to 8.96% in 1996 and the proportion of 20-24 year olds increasing slightly (8.81% to 8.96%). In absolute terms there will be virtually no change from about 5900 for both groups.

The rural parts of the Sunraysia region contain some of the most sparsely-populated farming areas of Victoria. By contrast the Sunraysia region also contains some of the most intensively-farmed land.

The areas of population growth have been, and will continue to be the large urban areas. On the other hand most of the extensively farmed areas and the small service towns which support them are experiencing a decline in population.

Specifically, Wolinski (1985) predicted the fastest rate of growth in Mildura Shire, an intermediate level in Mildura city and a decreasing population in Walpeup.

In the Riverland region over half the population lives in the nine urban centres (Barmera, Berri, Glossop, Loxton, Moorook, Morgan, Paringa, Renmark and Waikerie).

The largest of these - Berri, Renmark and Loxton - have populations of more than 3000. There is no dominant township.

The settlement pattern in the region follows the pattern of irrigation development.

Seidel (1985) reported that sustained population growth at an annual rate of between 1% and 1.5% is projected for virtually the whole area except Waikerie where the growth is expected to be negligible. Consequently, the Riverland College of TAFE will be catering for an increasing population through the 1980s.

These increases are expected to be greatest in the 20-44 and the over 60 age brackets. This latter increase is expected particularly in Barmera and Renmark (Rayment, 1988).

In New South Wales, Sixsmith (1986c) reported that Murray, Balranald and Wakool may expect very slow increases partly due to some retirement in the area and to the development of tourism. Conargo and Windouran are fairly static with little change anticipated. Balranald and Wentworth may continue to increase due to the overspill from Victoria, while Deniliquin acts as a service centre for the rural area and has a steady annual growth of 1%. Other rural areas have an aging population and thus are likely to continue declining. Sharpe (1986) observed that this was one result of emigration by the 15-24 year olds from the rural areas and small towns.

In his study Wolinski (1985) drew slightly different conclusions. He saw Murray having the fastest growth rate, Balranald and Wakool having intermediate levels of growth and Wentworth a low rate of growth.

Except along the River Murray, where Wentworth has grown due to its proximity to major towns across the Victorian border and the expansion of the wheat belt, the population in the far west region of New South Wales declined between 1976 and 1981 and it seems likely that this decline will continue due to the uncertainty of finding new and economic ore-bodies near Broken Hill. The balance of the region containing Central Darling and the unincorporated area is fairly static and is not likely to alter greatly (NSW, PPG, undated).

4. DEMOGRAPHY

4.1 Victoria

Compared with the rest of Victoria, the people of the region have low levels of educational attainment and relatively low incomes. A larger than usual proportion live permanently in caravans or improvised housing (Rogers 1985).

Sunraysia College of TAFE (1985) has stated that the rate of retention of school leavers in the Sunraysia area is low by national standards. It is claimed that 61% of Sunraysia residents left school at 16 years or younger. Further, Sunraysia has lower than the national average proportions of people with formal qualifications (Table 1).

Table 1

A comparison of formal qualifications of the population in the Sunraysia area with the national population by qualification and percentage

QUALIFICATION	SUNRAYSIA %	AUSTRALIA %
Postgraduate	0.2	1.2
Bachelor degree or diploma	6.1	6.5
Trade certificate	8.9	9.4
Technical certificate	5.0	6.7

[National % - 1981 census figures.]

The region contains about 14% of the Aboriginals in Victoria. This is about 1.2% of the total community.

People born overseas in non-English speaking countries are concentrated in Mildura, Swan Hill, Robinvale and the immediately-surrounding rural communities. Over one-third of people born overseas in non-English speaking countries come from Italy. Griff and Pey Hong Ng (1985) also reported an increase in the number of people of Turkish origin.

4.2 South Australia

Seidel (1985) reported that migrants form a proportionally smaller group of the Riverland community than for South Australia as a whole, but even so there are important groups from non-English speaking countries. These people are predominantly of Greek or Yugoslav origin and are concentrated near Renmark and Berri respectively. In addition Griff and Pey Hong Ng (1985) reported that recently there has been more migration by Turks, Vietnamese and Indians. In general, the migrant communities are concentrated around the horticultural areas and manufacturing centres rather than in the dry-land farming areas.

Aboriginals are not a large proportion of the area population but comprise a disadvantaged group with those social and economic problems so often associated with small Aboriginal communities in depressed rural areas, that is long-term unemployment and low levels of educational achievement.

4.3 New South Wales

The population of this part of the study area is overwhelmingly Australian born of English speaking parents. The Planning Division of the NSW Department of TAFE (NSW DTAFE, 1986) noted that the percentage of people aged 15-29 in the far-western region is higher than the state average, but the percentage of 0-14 year olds is lower because of emigration.

Sharpe (1986) reported that, in the Western Riverina district the proportion of the population with parents from Europe and Asia was well below the average for the state.

More than 3.3% of the regional population is Aboriginal the majority of whom live in the Central Darling, Deniliquin, Murrumbidgee, Murray and Wentworth Shires.

More than 1600 people left school before reaching the age of 14 and more than 70% have no post-school qualifications.

5. ECONOMY AND THE WORKFORCE

With the exception of Broken Hill which is almost entirely a mining city, the area is dominated by agricultural and pastoral activities and their associated service industries. Most communities within the area have a narrow economic base requiring a limited range of occupational skills and therefore they experience high levels of unemployment.

There are two principal economic constraints on the area. These are the continuing decline of many of the farming areas and their service towns and the fact that the sparse population must travel long distances to obtain access to basic community facilities and services.

5.1 Unemployment

The details of the unemployed people awaiting placement as at September 1985 for the employment districts in the area are shown in Table B3. According to Barnes and Teunissen (1985) there has been a substantial immigration of unemployed people into the Riverland region. They attributed this to the availability of cheap housing and the possibility of seasonal employment.

The Sunraysia region has had one of the highest levels of general unemployment in Victoria for several years. Sunraysia College of TAFE (1985) gave the most recent estimate as around 16%. Table B3 shows that, in September 1985, 2674 people were registered as unemployed and waiting placement at the Mildura office of the Commonwealth Employment Service (CES).

Workforce projections identify a need to create 290 jobs per annum over the next five years in Sunraysia, just to hold unemployment at current levels. To eliminate unemployment, 660 jobs per annum would need to be created while keeping pace with the expanded workforce. This is unlikely. The Sunraysia Research and Information Centre (1985) predicted that both male and female employment will decline; men a little more than women.

In the far west region of New South Wales, unemployment has increased substantially since 1981. In September 1985 there were approximately 1000 15-24 year olds (20% of the total) unemployed in Broken Hill (Table B3).

At the 1981 census there were approximately 125,000 people in the area aged 15 years and over. Of these 70,500 (56.4%) were employed and 9200 (7.4%) were unemployed. There were 2100 (14.3% of the total) 15-19 year olds and 2400 (17.0%) 20-24 year olds unemployed. Hence unemployment is a very large problem among the young people in the region.

For example in the Riverland region, teenage unemployment exceeds 20% of the teenage workforce in Berri and averages over 17% across the region.

It is generally accepted that this figure understates the real picture because of the hidden unemployment in family fruit blocks and farms where many young people are counted as part of the agricultural workforce to avoid the stigma of unemployment.

5.2 Employment

The occupations and industries of the employed population by local government areas are shown in Tables B4 and B5.

The Mallee area of the region has a concentration of farmers - both dry land and irrigation.

Agriculture is both the major employer and the major income earning industry. Horticulture is dominant in the irrigated river valleys, while away from the river, the area depends on broadacre farming - sheep, wheat and barley. Horticulture (grapes, orchards, vegetables) has undergone changes in recent years with vegetables for the city markets increasing in importance. Western Riverina is the centre of a big rice producing region (Trotter, 1986).

Economic activity in the far west region of New South Wales (outside of Broken Hill) is basically dependent on grazing (Parliament of NSW, 1984). Properties are family unit holdings and this has led to endemic difficulties in providing the necessary services to the widely dispersed population living in isolated homesteads. The holdings cannot sustain a level of self-sufficiency necessary to justify specialist services. Graziers tend to see themselves as an especially disadvantaged group by reason of isolation.

The majority of the secondary and tertiary employment is related to the processing of agricultural produce or to serving the needs of the rural sector. Broken Hill, Mildura, Berri and Renmark are the main retail and service centres and Mildura and Berri are the major manufacturing centres.

In Victoria, the government sees the management and marketing of tourist attractions as a potential growth area, but Seidel (1985) remarked that, in the Riverland, tourism is a comparatively minor industry depending essentially on domestic travellers who stay one or two nights at a time. Even so Dixon and Khan (1985) noted that a good deal of work had been done to improve the tourist potential of the area and that tourism will be a major area for future development.

5.3 Restructuring the economy

In recent years the irrigated areas have been described as being in crisis. A number of external pressures (for example brandy excise, dumping of cheap overseas produce) together with poor water quality and inefficient land management practices have had a severe impact on the irrigated horticultural blocks. Barnes and Teunissen (1981) add to that the possible closing of local canneries, but this is not imminent as Berrivale has recently announced an increased intake for 1986-87.

It has been accepted that restructuring of the economy of the irrigated areas will involve the rationalisation of small inefficient production units. This restructuring which is expected to be an evolutionary process has begun with the federally funded vine pulling scheme where wine grapes are being removed so that other crops such as stone fruits, almonds, lucerne, various kinds of nuts, table grapes and vegetables might be tried (George, 1986)..

The Riverland Development Council has launched a major strategic planning exercise in order to suggest solutions to the problems faced by the Riverland (Shetliffe, 1986). Such solutions could apply equally to the Sunraysia area. The exercise involves various industry groups of which one is an education and training group. Any resultant restructuring of the irrigation economy which follows from this examination will have considerable implications for retraining demands. As the only post-secondary education providers in the region, the TAFE colleges will have an important role to play.

As part of this restructuring, a number new commodities may be produced and these will have implications for training. (Victoria, 1984).

Examples of possible new commodities are:

a) Table grapes

The Department of Agriculture in Victoria has recently undertaken work leading to the rapid expansion of exports of table grapes - a six fold increase in the last three years. Main market opportunities are in South East Asia, Western Europe and North America, but the whole of the Northern Hemisphere (during March to June) is seen as representing a potential market. The potential export market is suggested to be $30 million - in 1982 the export earnings were about $4 million.

b) Stone fruits

Significant market potential exists for stone fruits (such as apricots, peaches, plums, nectarines) as evidenced by the trebling of exports of these products since 1979. South East Asia offers opportunties.

c) Cut flowers

Although the international flowermarket is extremely competitive, opportunities to export exist in Japan, Western Europe and United States.

d) Wine

The wine industry has over recent years experienced a major resurgence, especially in the area of the smaller or boutique wineries. Some impressive export successes have occurred and many more should eventuate.

e) Processed meats

Freedom from disease, access to efficiently produced cereal foodstocks, the absence of land constraints, plentiful available energy, and ability to control liquid wastes efficiently are among factors which confer a significant competitive advantage in expanding processed meat production.

Such products are considered to have good export prospects, especially in Asia and South East Asia and the expansion of such export activity would enable the consequent employment of large number of people in rural processing plants.

f) Game birds

Industries already exist for the production of game birds such as pheasant, guinea fowl and quail. There would seem to be considerable potential for export of these commodities within the area, given the existing grain producing industries, climatic suitability for bird production and the base of experience and expertise which now exist.

g) Specialist vegetables

Vegetables such as celery, asparagus and broccoli are experiencing an upsurge in demand, especially from South East Asia market. It is likely that export of these types of products will continue to expand.

h) Animal breeding

Animal breeding has undergone significant developments over recent years, especially with the widespread adoption of artificial insemination.

Thoroughbred horse breeding and training are already well developed and a small but significant trade in the export of breeding horses has developed. This industry should continue to grow.

e) Fresh water fish and crustaceans

Major inland fishing of a commercial nature is undertaken. The scope for the production of freshwater fish and crustacean has been largely unexplored.

f) In summary

Almost all of these industries are as yet on a small scale and, although their growth prospects vary, they contain great potential for sustained growth. In some views the growth prospects for such industries are substantially greater in relative terms than for traditional broadacre industries.

6. CURRENT TERTIARY EDUCATION FACILITIES WITH SPECIAL REFERENCE TO TAFE

6.1 Introduction

The Organisation for Economic Co-operation and Development (OECD) in its 1983 report on the future of vocational education and training stated:

> A central concern to OECD countries at present is how the contribution of vocational education and training to economic performance and development can be strengthened. A sustained recovery from the economic difficulties that most OECD countries have known since the early 1970s will be contingent on a restructuring of their economies to respond to an intensification of world-wide competition. . . . Vocational education and training as a whole have still to adapt to this new situation (p.15).

A Ministerial Statement of State and Regional Policies in Victoria saw the purpose of TAFE as being:

> to contribute to improving economic performance of the regions within the State by assisting in developing industries which build on the regional economic bases of the State and to contribute to the alleviation of problems arising from the concentration of slow growing or declining industries in certain regions (quoted by Rogers, 1985, p.16).

Put in other words, the policy of the Victorian Government is to pursue a policy of equity by spreading employment opportunities and income. It will pursue policies aimed at building on the competitive strengths of the industrial base of the region. It would be fair to infer that the New South Wales and South Australian governments would have similar policies.

Consistent with this policy, governments have taken steps in recent years to pursue greater participation in education by the community and particularly by educationally disadvantaged groups within society. These initiatives have been taken because of the vital contribution increased participation in education can make to economic and social well-being has been recognised.

TAFE is seen as being able to assist in achieving economic and social well-being by:

- raising the level of educational attainment of the community;
- increasing occupational skills;
- improving access to education and training opportunities;
- fostering equal opportunities in education;
- providing a bridging process to higher education courses (Rogers 1985).

In the tri-state area, much of this is being achieved already by interstate cooperation, examples of which are given below.

A large part of New South Wales relies upon a number of Victorian education providers along the Murray - particularly Sunraysia (from Wentworth) and Swan Hill. In 1983, there were 648 students from New South Wales studying at TAFE colleges in Victoria (Rogers 1985).

The cooperation between Riverland and Sunraysia has included the use of the technical and horticultural facilities of Sunraysia by Riverland students, the servicing of isolated Victorian centres by the Riverland mobile workshop and the provision of expertise from Riverland in the performing arts area (Seidel, 1985). In addition the Winery Cellars Procedures Certificate is provided jointly by the two colleges.

6.2 On-campus facilities

The available student places of all TAFE colleges in the area by discipline when all current proposals are complete is shown in Table 2.

6.2.1 Sunraysia College of TAFE

The Sunraysia College of TAFE has the most comprehensive facilities in the tri-state area, including extensive workshop facilities for trade courses. These facilities were funded by the Commonwealth Government on the understanding that they would serve the tri-state area (Seidel, 1985).

TABLE 2

Available student places of TAFE colleges in the area by discipline when all current building proposals are complete

DISCIPLINE	SUNRAYSIA	RIVERLAND					BROKEN HILL	DENILIQUIN	TOTAL
	MILDURA	BERRI	RENMARK	LOXTON	WAIKERIE	CADELL			
Agriculture and Horticulture									
Agriculture	84			18				45	147
Horticulture	40								40
Horticulture (Amenities)	63								63
SUB-TOTAL	187			18				45	250
Applied Science									
Biology	15								15
Chemistry	15								15
Physics	15								15
SUB-TOTAL	45								45
Art and Design									
Dark room	12						4	15	31
Graphics	15								15
Painting	15						15		30
Pottery	15			15		10	20		60
Printmaking	12								12
Sculpture	15								15
SUB-TOTAL	84			15		10	39	15	163
Automotive									
Automotive & Farm Mechanics	18	15					30	45	108
Panel Beating	12						15		27
Plant mechanics							15		15
SUB-TOTAL	30	15					60	45	150
Building Studies									
Carpentry and Joinery	30	15					24	30	99
Plumbing and gas fitting	15						12		27
Painting, decorating and signwriting							20		20
SUB-TOTAL	45	15					56	30	146
Business Studies									
Accounting	24						30	40	94
Computer Services	12	15					15	15	57
Keyboard skills	15	18					72	20	125
Stenography	24	18					30	30	102
SUB-TOTAL	75	51					147	105	378
Clothing and Textiles	15		15	8			45	15	98
SUB-TOTAL	15		15	8			45	15	98
Engineering									
Electrical & electronics	30						56		86
Fitting and machining	33	15					30		78
Metal fabrication	30	30				10	49	24	143
SUB-TOTAL	93	45				10	135	24	307
Food and Food Service									
Bulk food kitchen	15								15
Combined unit/general kitchen	15	15		8					38
Kitchen	15						24		39
Drinks	5								5
Bar/Cellar	15	5							20
Classroom	24	24							48
SUB-TOTAL	89	44		8			24		165
General Studies									
General classrooms	192	130	120	50	36	36	356	105	1025
Tutorial rooms	48	15							63
Multi-purpose activity	24								24
Language laborating	24								24
SUB-TOTAL	288	145	120	50	36	36	356	105	1136
TOTAL	951	315	135	99	36	56	862	384	2838

Notes: A hairdressing facility with 18 places is proposed for the Renmark Campus of the Riverland College of TAFE. 100 general studies places at Broken Hill are in mechanical drafting rooms.

While the major part of the resources of TAFE in the Sunraysia region of Victoria is devoted to vocational training (particularly the traditional trades), more resources are being provided for increased educational participation and greater equity of access. Emphasis is on retraining opportunities and skills-based training for unemployed people.

The Sunraysia College of TAFE forms part of the Victorian state network of TAFE colleges. It draws students from throughout its region and, in some programmes, from considerable distances outside the region. (Rogers 1985).

The college has an auditorium for 200 people.

There is a 53 hectare farm at Cardross which produces wool, fat lambs, beef cattle, lucerne and cereal hay, poultry, table grapes, drying grapes, citrus, pomme and stone fruit, avocados, nuts, strawberries and vegetables. There are glasshouses, shadehouses and field nursery areas as well as a workshop/classroom building and implement sheds.

6.2.2 The Riverland College of TAFE

The Riverland College of TAFE is one of the network of TAFE colleges in South Australia. It is the only post-secondary education institution in the Riverland of South Australia.

Seidel (1985) noted that the college operates in a context of local loyalties often outweighing regional interests, giving the college a difficult task in satisfying TAFE needs. A multi-campus structure has been developed in response to local pressures. There are five branches, each of which has its own facilities. In fact, the headquarters are incidental to the work of the branches.

Lack of technical facilities has restricted the ability of the college to service the full range of the TAFE needs in the region.

With the decision to shift the headquarters to Berri, it has been necessary, as a consequence of the decision, to provide new facilities there. These will include a multi-purpose workshop equipped to allow courses to be offered in a number of trade areas including automotive, metal fabrication and fitting machining and wood trades. This new development will provide facilities at a level appropriate to the immediate technical studies needs of the area, but specialist training needs will need to be serviced by other colleges.

The new Berri headquarters will house also specialist facilities for business studies, secretarial studies, health and care and computing and food and hospitality and a general purpose classroom.

The joint use library agreements with the Berri District Council and the Corporation of the Town of Renmark will be revised when the new headquarters, which includes a library resource centre are completed.

6.2.3 Broken Hill College of TAFE

Broken Hill College of TAFE is located on two sites (totalling 1.8 hectares) in Argent Street and accommodation is now under pressure. The main college campus which dates from 1900 is situated in the centre of the city. It contains three major buildings which are used for administration, fashion art and secretarial studies. The annexe is about one kilometre from the main campus and provides for a range of trades, home science, ceramics and drawing (Fraser, 1986a). There is a shortage of teacher offices, student amenities and general purpose classrooms (NSW DTAFE, 1986).

6.2.4 Deniliquin College of TAFE

Deniliquin College of TAFE is one of 13 colleges within the Riverina District of New South Wales. The regional centre is at Wagga Wagga.

Facilities exist to teach all three stages of the carpentry and joinery trades course (Deniliquin College of TAFE, nd), but the course itself is being phased out.

Sixsmith (1985) reported that a major building programme is needed if Deniliquin College of TAFE is to keep pace with the TAFE needs of the community which it serves.

The existing welding room is a demountable building which is too small for current needs and fails to meet occupational safety, health and welfare regulations. A new welding workshop is a top priority (NSW DTAFE, 1986b). There is also a case for more classroom space.

6.2.5 Mildura and District Education Council (MADEC)

This is a separate TAFE provider. Salaries are paid through the Council of Adult Education and limited recurrent funds for some administrative costs and programmes are allocated by the Loddon - Mallee Regional TAFE Board (Budge, 1986). The Council of Adult Education Act 1981 provides that:

> The Council of Adult Education may appoint Local Advisory Committees for districts in Victoria to represent voluntary associations or organisations interested in Adult Education in these districts.

MADEC is one of these advisory committees and operates from the MADEC Centre in Mildura. One of the functions of the Centre is to organise and conduct either on behalf of the Council, by itself or in collaboration with any other body, adult education in its district and generally to foster a personal and local interest in adult education.

MADEC is the Deakin University Study Centre in Mildura [Section 6.7.1].

6.2.6 Swan Hill Technical School

TAFE components of secondary schools in Victoria form a significant network serving a number of urban centres and surrounding rural areas. They meet many local vocational and preparatory needs. (Rogers 1985).

Facilities for TAFE are available in the technical school at Swan Hill. From 1987 these will be administered as a campus of the Sunraysia Multi-campus College.

6.2.7 Board of Adult Education - New South Wales

Much of the equivalent of the fee-paying non-credit courses of Victoria and South Australia is provided in New South Wales by the Board of Adult Education. The Board operates in Broken Hill through the Broken Hill and District Adult Education Council and in the Western Riverina through the Riverina Region Adult Education College which has its headquarters in Wagga.

These are both part of the evening college system which has operated in New South Wales for many years. Courses which are of enrichment type are outside the terms of reference of this study. Moreover services in the study area are rudimentary at best.

6.3 Residential facilities

The Sunraysia College of TAFE has accommodation for 60 students enrolled either in full-time courses or on block release apprenticeship training programmes.

6.4 Branch facilities

6.4.1 Sunraysia College of TAFE

Robinvale

A workshop room in the grounds of the Robinvale High School is available, as well as 'Robinswood', a homestead on the River Murray (Fox, 1986).

6.4.2 Riverland College of TAFE

The college has developed a network of campuses serving each of the population centres of the region.

This campus network has two key elements:

- it allows easy access to TAFE facilities from all the major population centres of the region;
- it allows the development of local specialisations and an increased responsiveness to local needs.

Details of the campus facilities are:

a) Renmark

- The former college headquarters which consist of offices and classrooms.
- A former high school workshop block which has basic facilities for the provision of pre-vocational courses in automotive mechanics and metal fabrication and facilities for gardener/greenkeeping and pottery.
- Joint-use library facilities with the Renmark Council.
- Access to the drama workshop at the Chaffey Theatre and the old Renmark Institute building for performing arts classes.

- An art gallery in an old theatre in the centre of the town for the display and sale of works by pottery and art students. The control of the gallery is soon to be transferred to the Corporation of the Town of Renmark.

- Melville and Seidel (nd) have recommended the operation of a hairdressing school in the Renmark branch of the Riverland College of TAFE to serve the whole tri-state area. This would be achieved by converting part of the existing Renmark branch at a cost of the order of $70,000.

b) Loxton

- Building with offices and classrooms.

- Joint-use library facilities with Loxton Council.

c) Waikerie

- Building in the old council chambers with offices and classrooms.

- Joint-use library facilities with Waikerie Council.

d) Cadell

- The campus is a transportable block within Cadell Training Centre (minimum security prison).

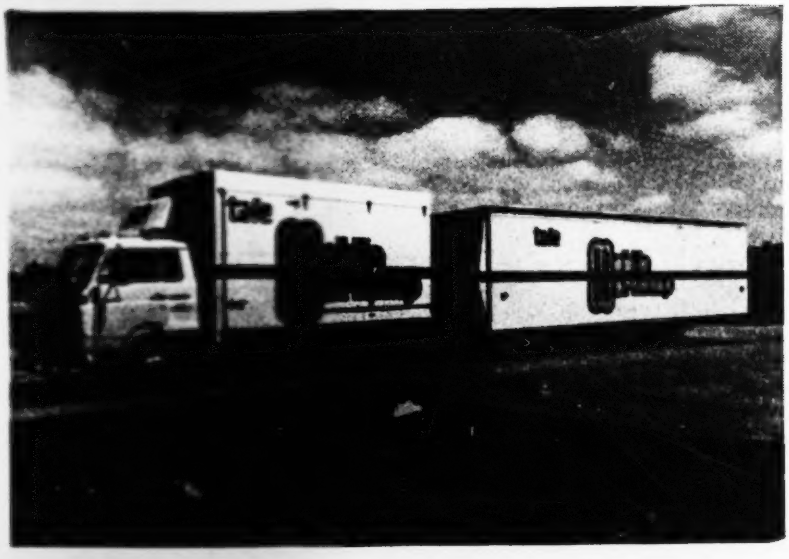
In addition, classes are conducted in the high schools at Glossop, Loxton and Waikerie and the area schools at Browns Well and East Murray. Various facilities are used also at Glossop, Gerard, Morgan and Swan Reach.

6.4.3 Broken Hill College of TAFE

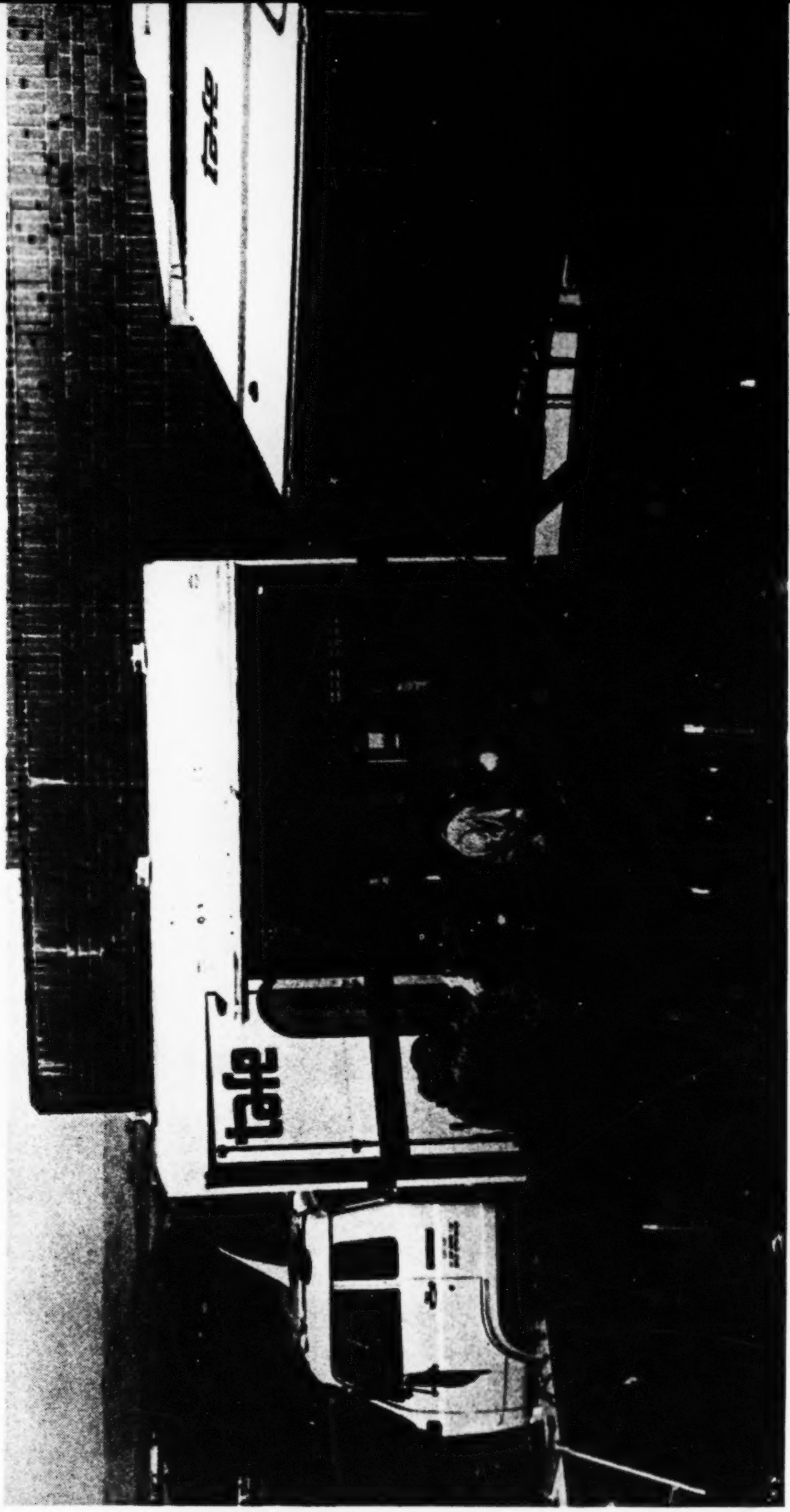
Courses are conducted at Ivanhoe, Menindee, Tibooburra, Wilcannia and White Cliffs. At Wilcannia there are two single demountable rooms with toilet facilities which are to become the Wilcannia campus of the Far-West Region of TAFE.

6.4.4 Deniliquin College of TAFE

The large number of distant circuit centres served is a feature of this college. Circuit classes are conducted at Balranald, Barham, Blighty, Hay, Mathoura, Moulamein, Tooleybuc, Wakool, Commeragunja (Sixsmith, 1985).



Scenes of the Riverland College of TAFE mobile workshop



Riverland College of TAFE mobile workshop

TAFE
TAFE
MOBILE INSTRUCTION UNIT NO. 8

New South Wales Department of TAFE road mobile instructional unit
35

Sharpe (1986) reported that it was possible that an area study centre would soon be developed in Hay.

Outreach programmes are being conducted at Bunnaloo, Oxley, Mathoura, Jerilderie and Clare (Sixsmith, 1986b).

6.5 Mobile teaching units

6.5.1 Sunraysia College of TAFE

The Sunraysia College of TAFE endeavours to take courses into the isolated hinterland of the college. For this purpose it has four vans, a station wagon and a sedan.

About 20 courses per week are provided.

When it is not possible to provide the complete course in this way, it is usual to offer a live-in component.

6.5.2 Riverland College of TAFE

The Riverland College of TAFE has a mobile workshop which consists of a truck and a caravan with an overall length of 17 metres (see photographs p.33, 34).

The truck, equipped with its own generating plant, provides for the teaching of welding processes and techniques including oxy -, arc -, MIG and TIG.

The caravan is equipped for automotive work and is fitted with a lathe, bandsaw and drill-press. It is suitable also for diesel mechanics, microwave cooking and computing (Snell, 1985).

The unit services the Mallee country south of Loxton and some parts of the pastoral country north of the Murray River. At present it is not occupied full-time in servicing TAFE in the Riverland area. It operates in other parts of South Australia for 25% of its time.

6.5.3 New South Wales Department of TAFE

This Department operates a number of mobile instructional units including five rail units, and some road units.

Two of the rail units provide instruction in welding and serve the Central West and Bourke, Cobar and Nyngan. These are outside the area being considered in this study.

Specially equipped caravans are provided for teaching shearing shed expertise. The caravans remain in a centre for a period of twelve months.

There is an articulated unit (plus four wheel drive and caravan attached) for special programmes. This unit is equipped to teach basic automotive engineering, welding, bricklaying and carpentry and joinery. Using resources carried by this unit, home science courses have been held using facilities at nearby schools (Deniliquin College of TAFE, nd) (Photograph p.35).

6.6 DISTANCE EDUCATION FACILITIES

Of the 166,000 people in the region (125,000 are fifteen years of age and over), 46,000 (just under 30%) live in areas remote from established TAFE facilities. While branch facilities and mobile workshops can make a contribution, many potential students will need to study through distance education facilities (external studies). The framing of recommendations on the most effective methods of delivery of TAFE programmes to these students is one of the principal purposes of this study.

Keegan (1980) has identified a number of elements which distinguish distance education. These include:

- the teacher and learner being separated;
- an organisation or institution which influences the study programme;
- technical media, usually print, being used to unite the teacher and learner and to carry the educational content;
- provision for two-way communication so that the student may initiate and benefit from dialogue;
- a possibility of meetings between teachers and learners.

6.6.1 Distance education institutions serving the tri-state area

a) Victorian TAFE Off-Campus Network (VTOCN)

This body offers courses in Victoria by the off-campus mode. It does this by means of study materials, centrally produced by the TAFE off-campus co-ordinating authority (TOCCA) and designed to be as self-contained as possible. In order to overcome the limitations of the traditional correspondence course, these materials are combined with local academic and general support provided by off-campus centres in fifteen technical colleges/schools throughout Victoria (Curry, 1985) (Map 5).

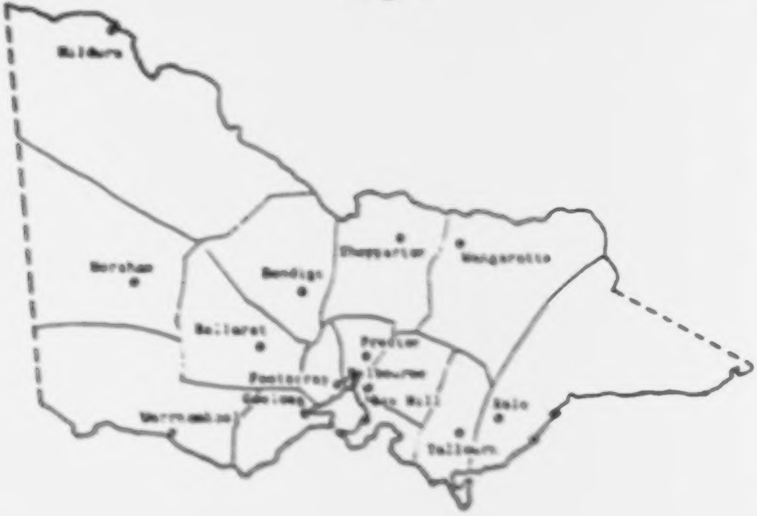
In addition, Fallon (1986) pointed out that VTOCN offers other study options including:

- teleconferencing between TAFE teachers located in Melbourne and regional centres using loudspeaker telephones or small group terminals;
- the use of a mobile computer unit and technical laboratory;
- broadcast of course content from local public access radio stations and the distribution of audiotapes to students in areas beyond broadcast range;
- distribution of video materials to students via inter-library loans and mobile laboratory services.

The Sunraysia College of TAFE is part of the Victorian TAFE off-campus network (VTOCN). Distance education students are part of the college and may use the library and other facilities and may attend organised practical sessions or seminars.

At the Sunraysia College there is a local co-ordinator who is a specialist in the organisation and educational philosophy of the off-campus mode. He is available both for general academic assistance and for assistance with administrative procedures. Tutors are employed locally to provide specific academic support.

Map 5


Mildura
Horsham
Bendigo
Shepparton
Wangaratta
Ballarat
Preston
Footscray
Melbourne
Geelong
Box Hill
Warrnambool
Sale
Yallourn

Victorian TAFE off-campus network

The study materials contain self-help and tutor-assisted exercises. The materials are not limited to the printed page, but use whatever medium is appropriate - radio, audio-tape, photographic slides, movie film, telephone, television and computers (Lyons, 1985).

b) Adelaide College of TAFE

This is the principal TAFE college in South Australia which offers courses for external students. The college aims to make education available to people who might otherwise be prevented from studying by barriers such as distance, domestic commitments, working hours, lack of transport, age, shyness or physical disability (Arnold, 1985).

A few courses are offered by Kingston and Regency Colleges of TAFE (DTAFE, SA, nd).

c) External Studies College of TAFE, NSW

This is the only New South Wales College of TAFE which delivers courses by external rather than by classroom instruction. Students have the support of the network of TAFE colleges in New South Wales and the services which they offer.

It is policy that entry to TAFE courses be as open as possible and all courses are equally available to men and women, provided essential requirements are met. Interstate students are not normally permitted to enrol if the same or a similar external course is available in their own state (External Studies College of TAFE, NSW, nd.).

d) School of the Air - Broken Hill

The Education Department of New South Wales conducts a School of the Air over four frequencies to the whole tri-state area. This has been used by the Board of Adult Education for TAFE programmes.

e) Community radio in Bourke

A project has been set up to develop effective distance learning programmes with a high proportion of radio content for people living within range (300 km) of the community radio station in Bourke. Both White Cliffs and Tibooburra are in the reception area (Parsons, 1986).

A distance education project officer is stationed in Bourke and works through the Bourke campus of the Orana Community College (Dubbo) and the community radio station. Courses include 10-12 half-hour radio sessions, talk back tutorials, printed material, home practicals and workshops.

Feedback from students suggests that, although the courses are successful, it is difficult to find suitable broadcast times. Rebroadcasting and recording on cassettes were suggested as answers to this problem.

6.6.2 Disadvantages of the current facilities

Several disadvantages of the traditional 'correspondence' facilities are listed by Gough, et al (1981). They were:

- inadequate resources to develop properly designed and published self-instructional materials;
- insufficient interaction between teachers and learners;
- slow response times;
- too much reliance on print;
- difficulties in providing up-to-date and accurate information to students;

- problems in identifying students at risk, knowing whether they are still continuing their courses and in motivating them;
- provision of adequate support services becoming increasingly difficult as budgets shrink.

There is potential to overcome all but the first and the last of these in exploiting the possibilities of satellite technology and the other rapidly increasing electronic telecommunications systems.

The School of the Air has two disadvantages of its own:

- the frequencies are available only when not required for the principal purpose of teaching primary school children
- the frequencies are not very effective at night due to interference and this is when these frequencies are more likely to be available and when students would have the time to listen.

6.7 Study centres

Bayly-Stark (1986) reported that one answer to the problem of isolation from education programmes is the study centre. She described one which is being developed to serve the north west of Tasmania. Among the activities which are relevant to this study are

- the provision of support for students studying external courses conducted by other TAFE or higher education institutions;
- the provision of counselling and other student services;
- the coordination of higher education in the region.

Northcott and Shapcott (1986) have identified five models (or levels) of study centre.

Model 1 (level 1). Regional outreach centres.

Features of this model include:

- staffed by full-time co-ordinators and other staff who assume a proactive role towards students and who exhibit a high public relations profile;
- a client-oriented approach;
- services are provided for students from many institutions;
- a wide range of facilities is provided;
- a degree of autonomy is ensured by direct government funding.

Model 2A (level 2)

Centres are part of a network of campuses in which external students have the same access to resources and personnel as internal students. In some cases students are enrolled at the campus which operates as their study centre and the staff of that centre maintains student records, monitors progress and provides general learning management services.

Model 2B (level 3)

A host institution offers to off-campus students of other institutions access to resources and perhaps a contact person for advice, but it unlikely to be proactive in relation to those students.

Model 3A (level 4)

These are within a continuing education centre or education centre. The study centre role is one of a number of functions performed by the centres for their communities.

Model 3B (level 5)

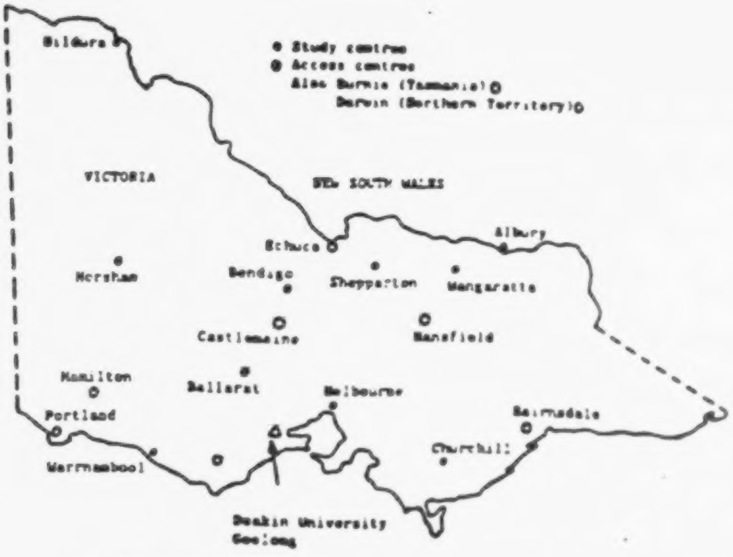
These are separate centres which have been established and funded by distance education providers for use as local centres by their external students.

6.7.1 Deakin University

Smith, et al (1985) noted that, from the outset, Deakin University has emphasised the provision of programmes through distance education. In 1978 Deakin established a network of ten study centres (Map 6). They were seen as providing:

- a university presence;
- accommodation for occasional tutorials and lectures;
- facilities for storing, using and lending equipment;
- a meeting place for students;
- a reference centre.

Map 6


Mildura
● Study centres
◎ Access centres
Also Burnie (Tasmania) ○
Darwin (Northern Territory) ○
VICTORIA
NEW SOUTH WALES
Echuca
Albury
Horsham
Bendigo
Shepparton
Wangaratta
Castlemaine
Mansfield
Hamilton
Ballarat
Melbourne
Portland
Bairnsdale
Churchill
Warrnambool
Deakin University
Geelong

Deakin University study centres and access centres in 1984

The centres were not intended to duplicate the face-to-face teaching arrangements of on-campus students for as Gough (1974) said this would reimpose the constraints of time and place that off-campus studies is designed largely to avoid. However, it was anticipated that, where enough students in a district were enrolled in the same course, a tutorial class meeting under the guidance of a local tutor appointed by the university would be formed. One of the centres was established at Mildura using the MADEC facilities. Library materials are housed in the public library because the MADEC Centre lacks the facilities.

In their five-rung hierarchy of study centres, Northcott and Shapcott (1986) categorised this centre at level 4.

6.7.2 Sunraysia College of TAFE

The Sunraysia College of TAFE describes itself as a study centre. It is part of VTOCN, the operation of which is described in Section 6.6.1(a). Northcott and Shapcott (1986) categorised this centre at level 2 in their five rung hierarchy.

6.7.3 Riverland College of TAFE

An access learning centre operates from the Berri campus of the Riverland Community College. Students develop their own programmes in consultation with tutors and are able to work largely on their own or with one or two other students.

Students can make use of computer assisted learning in some programmes.

At present the access learning centre is limited to TAFE programmes. The Riverland Development Council (Shetliffe, 1986) is advocating a tertiary education facility in the area. In this report the development of the Berri centre is seen as the answer (Section 9.6(b)) (Recommendation 6.4).

6.7.4 Robinson Centre for Higher Education

When the Robinson University College in Broken Hill closed, the Higher Education Board asked the Mitchell College of Advanced Education in Bathurst to conduct a study centre in part of the university building. The centre, although administered by Mitchell, is funded by the Higher Education Board. (Murray, 1986).

The study centre is available to anyone who is undertaking higher education, regardless of institution. There is a small collection of books mainly left over from the university college but no library budget. Mitchell students may contact Bathurst through a 008 number and a two-way electronic chalk board is being tested.

There is no front office staff and no assistance is available to students who are seeking to enrol in higher education institutions.

Tutorials will be provided depending on the demand, but there is no budget for local tutors. The Centre also acts as an examination centre for higher education institutions.

Northcott and Shapcott (1986) categorise this centre at level 2.

6.8 Country Education Project

This is a Victorian Government project designed to promote community education for people (for both adults and children) in isolated areas. Fox (1986) commented that the definition of education in the context of this project was quite liberal. The major concern was with funding people, not courses. CEP operates at the community level by encouraging schools to use their initiative and imposes no set routines or programmes (Greagg, 1985).

7. THE TAFE AND HIGHER EDUCATION NEEDS

7.1 Introduction

Rogers (1985) noted that the concentration of TAFE staff and facilities in the large towns has contributed to the fact that the population in many of the more isolated parts of the area has an exceptionally low rate of participation in TAFE. This is true both of vocational and self-funded courses. That is, the present arrangements for the delivery of TAFE appear to be unable to meet equitably the needs of the area.

The conclusion which may be drawn is that participation in TAFE is not necessarily related to need but rather to proximity to a TAFE institution.

That is, the size and dispersed population of the area provides a major constraint upon TAFE in attempting to provide equitable access to programmes. The fundamental purpose of this study is to make recommendations to change this situation.

This is consistent with the objective of the Commonwealth Government that differences in participation rates in tertiary education be reduced as far as possible. As CTEC (1984) noted

> The stress on encouraging participation among certain groups in the population . . . must not blind us to the fact that there are also significant imbalances in the provision of tertiary education as between States and regions within States. (para 3.34, p.70).

Wallace (1985) suggested that the area covered by this study qualified for a high priority for TAFE expenditure on both equity and participation criteria since it combined the presence of disadvantaged groups with an overall depressed participation rate in tertiary education.

He reported that a recent survey had indicated that 34.4% of the Sunraysia community wished to engage in further study and that the educational services available presently cannot cope with the scale and range of requirements.

Rogers (1985) noted that at present many people satisfy their needs by attending TAFE colleges outside the area because the desired programme is not available. Cheong and Dedman (1985) reported that the need for education is a principal cause of emigration. Indeed 410 people living in the Riverland College region enrolled in colleges outside the region in 1983 (Table 10).

One approach to this problem is to develop the present vestigial co-operation between the colleges in the area in the provision of courses so that certain demands may be consolidated and provided at one college.

Another is to give the local communities greater capacities to research their needs. There is some capacity for this in the Riverland region where the Riverland Development Council has set up an educational training group as part of its strategic planning exercise (Shetliffe, 1986). Its view is that reconstruction of the economy is going to require an increase in the quality of the available manpower and a means to achieve this increase in quality will be necessary.

A third approach is to give local communities a greater degree of autonomy in selecting and providing TAFE programmes. In effect the community providers of TAFE will have a greater role in the delivery of programmes, particularly in self-funded enrichment courses.

There will also be a need to reduce the level of isolation of the population from the TAFE providers by developing the less common methods of delivery, for example, outreach programmes, mobile educational units and telecommunication links.

There is also a definite need, as yet small and undefined, for higher education.

7.2 Training needs of the area

The planners of the Sunraysia College of TAFE have developed a concept proposal (Nice and Lyons, 1984) for the development of a new college, in which they draw heavily on the work of the Develop Mildura Council (Gordon, 1985). This identification of training needs has been accepted as a basis for the Sunraysia region in this study.

The possibility of the South Australian Government initiating regional development in the Riverland region has implications for TAFE training. At its most extreme, regional redevelopment could involve a major restructuring of the horticultural sector, including rationalisation of small inefficient production units and a consequent need for retraining of displaced producers. More likely however, is an evolutionary process in which the majority of government departments will have a role in facilitating a reorientation and diversification of the Riverland economy. As the only post-secondary education provider in the Riverland region, the Riverland College of TAFE will need to accommodate the changing training needs. In particular, the Riverland Development Council sees it appropriate for the college to develop pools of expertise relevant to the industries of the area (Shetliffe, 1986).

Besides the training needs associated with restructuring the economy, there will also be training needs associated with ongoing developments in the area. Manser (1986) suggested that such training should concentrate on transferable work skills.

On the other hand, Fielke (1986) called attention to the Group One Year Apprentice (GOYA) Training Scheme which is interesting a number of employers. In this scheme, young people are indentured to private employers but undertake the full first year of indenture in government training centres with all costs except workers compensation being met by the government (Barclay, 1986). A substantial use of this scheme by employers would reduce the demand for first year instruction in the region unless a training centre is available locally. The South Australian Engineering and Water Supply Department which is the biggest employer of apprentices in the Riverland region already uses this scheme of training and sends its apprentices to training centres in Adelaide (Forward, 1986).

In general terms, one of the best sources of information on TAFE needs should be the staffs of secondary schools, many of the students of which provide the principal source of TAFE enrolments. Consequently, the ideas of secondary school principals and their staffs have been sought.

Overall the information obtained was not very helpful. Career advisers, for example, were not necessarily well informed about TAFE opportunities and one secondary school teacher expressed concern that he did not know what TAFE was.

There was knowledge of link courses, the Joint TAFE/Schools Program and pre-apprenticeship courses, but there appeared to be a very limited understanding of where these might lead. There was a general consensus that such courses might be merely a holding bay prior to unemployment.

Secondary schools by-and-large knew that a proportion of school leavers went on to higher education (33% from Broken Hill High School in 1984) (Gralton, 1986).

In fairness, this lack of knowledge was not unique to secondary schools. The public profile of TAFE did not appear high. In fact Channell et al (1985) in a study of the expectations and aspirations of high school students in Renmark found that the students saw colleges of advanced education and universities as the only forms of further education to pursue. Johnston (1986) and Cass (1986) saw a need to promote TAFE more, so that any certificates gained would receive wider recognition and lead to greater employment opportunities.

To some extent, this lack of knowledge and understanding of TAFE in the area could result from the fact that the information services are located in the capital cities and that the region is remote from these services. This is a problem which should be addressed. It is RECOMMENDED that each college in the area have the facility to promote TAFE in its own region and that this be the responsibility of the off-campus programme coordinators (Section 9.3).

Despite this some training needs as expressed by young people about to leave secondary school were identified. These were:

- plant mechanics and operators
  This is discussed in Section 7.2.2 (b).

- plastering
  This is provided nowhere in the region. This is discussed in Section 7.2.2 (c).

- catering
  An apprentice programme in cooking and a Certificate in Catering are available at Sunraysia (Section A.1.1 (k)).

  Borschmann (1986) also suggested training in butchery, but likely demand would not justify the provision of facilities.

- club management
  NSW Department of TAFE provides a higher certificate course but it is not available in the Far-West Region. Social movements in South Australia and Victoria may lead to the clubs in these states approaching the NSW pattern bringing about new training demand.

- hairdressing, beauty therapy, cosmetology
  Although all states provide programmes in these vocations, there is none in the study area. Provision of facilities is discussed in Section 9.2 (a).

- human services
  There is provision for the Child Care Aide Certificate at Sunraysia. Osborne (1986) indicated that at present other students need to go to Adelaide. The need for programmes for people working with the elderly is discussed in Section 7.2.3.(d) and a recommendation is made on the provision of the Certificate of Child Care Studies in Section 9.1.3 (c).

- electronics and instrumentation
  No training at apprentice level or above in electronics or instrumentation is available in the region. Bosnich (1986) reported that, while no apprenticeships were available in these areas in the Broken Hill mines, the mines were advertising for tradesmen. With regard to instrumentation, Byrne (1986) indicated that the mining employers preferred to leave the training to the suppliers of the equipment.

- distributive services (retailing)
  This is discussed in Section 7.2.3.(c)

- dental hygiene
  Enrolments in this specialist course are likely to be minimal and could not justify the provision of expensive facilities.

- signwriting
  A recommendation is made on this in Section 9.1.2 (c).

- boilermaking
  This is discussed in Section 9.1.2 (e).

- greenkeeping and ornamental horticulture. A recommendation on this is made in Section 9.1.1.

- glassworking
  The demands in the area would not justify such provision.

Quinn (1984) conducted a survey of the community needs for TAFE in the Far-Western Region of New South Wales. The survey covered the Pastoralists' Association, the Department of Agriculture, Youth and Community Services and the Broken Hill Community Health Centre. The townships of Wilcannia, White Cliffs, Ivanhoe, Tibooburra and Menindee were also surveyed.

This survey was very specific and reflected the needs at that particular time. Fraser (1986a) suggested that it would actually be more profitable to highlight common areas of course requirements in far-western New South Wales. These include welding, diesel motor maintenance, home catering, home maintenance, fashion and craft and office procedures. Provision might be made using local facilities or mobile workshops.

Parsons (1986) conducted a mail survey of the area serviced by the community radio station in Bourke which includes Tibooburra and White Cliffs. She identified needs for parenting, farm management, creative writing and business awareness courses.

7.2.1 Enrolment trends

A first wide view of the training needs of the region can be obtained from an examination of the enrolment trends in recent years. The full-time equivalent enrolments for the colleges of the region over the years 1979 to 1985 are shown in Table 3.

Since Sunraysia College of TAFE was established in 1980, there has been a steady growth in enrolments. Over the same period Riverland College has shown a similar increase, with the emphasis on access education.

Equivalent full-time enrolments over the last five years at Deniliquin College of TAFE rose steadily in 1983 and 1984, but declined in 1985. During the last five years enrolments in trade courses have declined.

The projected demand for 1990 in terms of full-time equivalent enrolments by programme is shown in Table 4. This does not take account of the demands of the traineeship programmes recommended by Kirby (1985). With a target of 75,000 places nationwide by 1988, on a pro-rata basis this suggests between 800 and 900 by 1988.

Table 3

Full time equivalent enrolments in colleges of the area 1979-85

Year College	1979	1980	1981	1982	1983	1984	1985
Sunraysia		370	530	510	630	690e	740e
Riverland	350	260	450	420	540	610e	680e
Broken Hill		460	560	490	580	670	730
Deniliquin			270	230	280	310	230
TOTAL			1810	1630	2230	2280	2380

e. estimate
Full-time equivalent enrolment obtained by total enrolment x 0.23.

Note: A blank indicates that the figures are not available.

Sources: Nice and Lyons (1984)
Seidel (1985)
Broken Hill College of TAFE (nd)
NSW DTAFE (1986b) (1986c)

These projections have been developed on the following bases:

- Where projections have been published earlier, these have been used and acknowledged. This has been the primary source.

- Where a projection has been developed for one part of a region only, this projection has been extrapolated for the whole region.

- Where no other projections have been available, they have been developed from the actual (or, if available, projected) workforce figures using Kuhl et al (1983) who estimate that between 11% and 16% of the workforce should be in training at any one time.

TABLE 4

Projected full-time equivalent enrolment demand and student places in the TAFE Colleges in the region by programme and college, 1990

PROGRAMME	SUNRAYSIA		RIVERLAND		BROKEN HILL		DENILIQUIN		TOTAL	
	Projected demand	Student places	Projected demand	Student places	Projected demand	Student places	Projected demand	Student places	Projected demand	Student places
VOCATIONAL										
Agriculture & Horticulture	170	187	100	18	-	-	40	45	310	250
Art and design	54	84	20	25	70	39	15	15	159	163
Automotive	41	30	32	15	30	60	15	45	128	150
Building	95	45	32	15	40	56	5	30	171	146
Business & secretarial studies	190	75	185	51	70	147	70	105	515	378
Clothing and textiles	60	15	12	20	80	45	100	15	167	98
Electrical and electronics	24	30	25	-	60	56	5	-	114	86
Engineering trades	59	63	50	55	110	79	30	24	249	221
Hairdressing	17	-	8	18	8	-	2	-	35	18
Hospitality	162	89	35	52	60	24	25	-	282	165
Human support services	40	-	20	-	20	-	10	-	90	-
Languages	10	24	-	-	-	-	-	-	10	24
Library studies	10	-	6	-	10	-	10	-	36	-
Music	-	-	6	-	-	-	-	-	6	-
Performing arts	-	-	2	-	-	-	-	-	2	-
SUB-TOTAL	902	642	533	272	558	506	305	279	2274	1699
ACCESS AND PREPARATORY										
Aboriginal education	-	-	58	-	10	-	5	15	73	15
Adult literacy & numeracy	-	-	26	-	10	-	5	15	41	15
Adult matriculation	2	-	22	-	-	-	10	15	34	15
Migrant education	12	-	45	-	-	-	-	15	57	15
Participation and equity	153	-	65	-	80	-	15	15	313	15
Prisoner education	-	-	22	-	-	-	-	-	22	-
Other access	57	-	83	-	20	-	40	30	200	30
SUB-TOTAL (including general class-rooms not specified above)	224	309	321	387	120	356	75	105	740	1157
TOTAL	1126	951	854	659	678	862	380	384	3014	2856

Sources: Nice and Lyons (1984)
Sixsmith (1986c)
Seidel (1985)
Sharpe (1986)
Williams (1986) Personal communication, NSW DTAFE (1986c),
Melville and Seidel (nd),
Keevers (1986).

Note 1: One part-time enrolment is assumed to be 0.23 of a full-time enrolment.

Note 2: Sunraysia College of TAFE expects 90 full-time equivalent secondary students in art and design and 30 in business and secretarial studies. These have not been included as the terms of reference of this study does not include facilities for secondary education.

With regard to the projections for the Broken Hill College of TAFE, it has been assumed that if the overall participation rate of 15-29 year olds in the far western region of New South Wales were to increase, despite the falling population, there may be no significant change in the numbers at Broken Hill College of TAFE. While increased participation in some non-trade disciplines is likely, given the state trend, it has been considered that student numbers in trade areas will be stable (NSW DTAFE, 1986c). This may be unduly optimistic considering a recent report that the Zinc Corporation has cut its 1987 apprentice intake by 75% (Keevers, 1986).

7.2.2. Primary Industry

There will be an increasing use of technology in the primary sector with a resultant increase in the requirements for the service industries.

The UFSO of SA in its submission to the South Australian Council of TAFE (SACOTAFE) (UFSO,1986) commented that the market for short courses could be grouped into two overall client areas.

- Those without formal agricultural training need a range of courses from basic skills, for example, welding, through to a full range of management programmes.
- Those with formal agricultural training need courses to keep up with technology in its widest sense.

With more and more farmers and their employees undertaking formal training programmes, the demand for the first type of course will decrease. However, this fall will be more than balanced by:

- a need for short courses/seminars for farmers wishing to adapt quickly to technological change;
- farmers becoming more training oriented;
- a need for courses in skills such as marketing and promotion; interpersonal skills and communication; negotiation and staff management and training.

Seidel (1984) estimated an annual potential demand for rural studies courses from the farm workforce in the Riverland area of between 500 and 700 part-time enrolments by 1991, while Nice and Lyons (1984) estimated a demand in the Sunraysia area of nearly 700. Shetliffe (1986) commented without being specific about numbers, on a need for training in general management and horticultural and viticultural practice.

One training possibility in an area where there is a strong tourist element is in greenkeeping. All parts of the area have ovals, golf courses and bowling greens for which there should be an increased demand for skilled staff.

The Pastoralists Association of the West Darling has been advocating a pastoral college (Heuzenroeder, 1986).

The primary industry areas in which training needs have been identified are set out below.

(a) Grape growing

Fielke and Kuhl (1982) found that grape growing workers required training as blockhands, pickers and pruners. They estimated the demand for the Riverland at between 185 and 255 part-time enrolments. On a pro-rata basis, there would be a demand at Sunraysia of between 240 and 340.

(b) Citrus

Dixon (1986) saw the need for training in the presentation of citrus for sale. Training was also necessary in quality control, particularly packing. Gambetta (1986) would agree with this. She also saw training in packaging extending to the design of the packages.

(c) Cereal growing, fat lambs

This will include programmes such as the Certificate in Farm Practice (SA) and Certificate in Agriculture (Vic). Bolto (1986) stated that in South Australia generally the programme has been very successful, but Redden (1986) indicated that in the East Murray area (south of Loxton) there was little interest in the programme. However, Rollbusch (1986) saw East Murray as the next target.

Rollbusch also saw a need for follow-up training for farmers as technological change presents a continuing need for training.

(d) Wool Courses

Heuzenroeder (1986) pointed out a need for courses in sheep/wool for example, woolclassing, objective measurement of wool and owner-classer stencil. Shearing courses and courses for shearing shed hands were also required.

(e) Flower growing

Reference was made in Section 5.3 to the potential export market for cut flowers. Harkins (1986) indicated that there could be a resultant training demand.

7.2.2 Secondary industry

The future of secondary industry in the area depends largely upon the health of the primary industries (including mining) which the secondary industries serve. There are conflicting views for far-western New South Wales. In one view and that which is accepted locally, the depression in the mining industries is expected to lead to a drop in the demand for trade training. (Fraser, 1986a), while the NSW Department of TAFE expects the numbers to be stable (NSW DTAFE, 1986c).

The consideration of training needs for secondary industry in the regions should not be limited to traditional employment patterns, that is apprentices indentured to individual employers. The Riverland Development Council is moving to establish group apprenticeship (Shetliffe, 1986). If this is successful, training demand could increase, but not at the local level if the training is conducted in government training centres of which there are none in the area.

Forward (1986) commented on the lack of post-trade training in the Riverland.

a) Wine producing and processing

The wine industry in Australia has seen rapid and substantial development in the past decade. Changes in management, developments of technology, economic restrictions and an increasing awareness by consumers of wine have changed traditional wine making methods. Wines are now produced in a cost-conscious environment of modern machinery designed with process efficiency in mind.

Consequently, cellar operations have changed from largely labour-intensive work to operations where fewer employees operate highly sophisticated and expensive machines. Cellar hands work with complex crushing equipment, bulk handling equipment, sophisticated presses, centrifuges, ion exchange equipment and so on. Modern laboratory procedures ensure maintenance of quality (DTAFE, SA, 1982).

Therefore the training of winery cellar workers and laboratory technicians is becoming increasingly important. Workers need a broad general knowledge of:

- machine operation and minor maintenance - presses, pumps, centrifuges, filters;
- the general chemistry and microbiology of wine making.
- hygiene, cleaning, sterilising;
- coopering (maintenance, repairs) (Weeks, 1986).

Other wine workers needs courses in:

- French. (The major part of published wine research is in French);
- Basic accounting;
- Computer operation;
- Short courses in management.

Fielke and Kuhl (1982) prepared an estimate of the annual training needs for wine makers and related workers for the Riverland (viz 45-65). Extrapolating for the total area, the training demand is estimated to be 110 part-time students.

b) Automotive and diesel mechanics

Motor mechanics is the second largest trade group in the Riverland region and some expansion in demand is expected. Menser (1986) said that, from the point of view of the Commonwealth Employment Service in the Western Riverina, there is an immediate need for motor and diesel mechanics. Quinn (1984) identified need at Tibooburra and Ivanhoe, while Heuzenoeder (1986) saw it as a need for the whole pastoral area.

A related training programme for which there should be considerable demand in an area with much heavy road-making and earth moving equipment is plant mechanics. Such training would involve training in testing systems, fault diagnosis and the repair of plant vehicle and equipment components.

There is a further training need for the operators of heavy machinery. Jenkins (1986) pointed out that, in Victoria, operators of this type of machinery must be licensed.

c) Building

A considerable expansion in demand is expected in the Riverland area as a consequence of the new workshop at Berri (Section 6.2.2). Barnett (1986) commented on the need for plumbing trade training in the Western Riverina, while Houston (1986) saw a need for basic building and plumbing (windmills, troughs) in the remote areas.

Some minimal demands for training in plastering (Gralton, 1986) bricklaying, painting and decorating and signwriting (Harkins, 1986) were also indicated.

Jenkins (1986) pointed to the on-going licensing needs of scaffolders and riggers and he advocated on-going courses for scaffolders and one every two years for riggers.

d) Electrical, electronics and instrumentation

Except for a course in applied electricity which qualifies the student for a B class licence, courses in these disciplines are not offered in Riverland at present, but Seidel (1985) has identified an increasing demand as a consequence of the new workshop. Barnett (1986) commented on a need in the Western Riverina, while Quinn (1986) pointed to a demand for training in the maintenance of low-voltage electrical plant in Western New South Wales. Forward (1986) commented on lack of training in instrumentation.

e) Engineering trades

A strong increase in demand for both fitting and machining and welding is anticipated in the Riverland as these are the most important sources of trade employment. Houston (1986) reported that there was a demand for plant maintenance in remote areas, Quinn (1984) reported that skills in welding and metal fabrication are required at White Cliffs and Tibooburra and Heuzenroeder (1986) saw it as a requirement for the whole pastoral area. Gambetta (1986) saw a need for training in mechanical drafting.

7.2.3 Tertiary industry

a) Hospitality and tourism

Seidel (1985) noted that tourism is being cited constantly in the Riverland as the growth industry within that region, but that there is a lack of hard evidence to support the contention. For example, Dixon and Khan (1985) commented that the South Australian Government Tourist Bureau in Adelaide had only one pamphlet on the Riverland. Seidel considered that there is an opinion in the community that tourist development just happens and therefore does not need promotion. This opinion needs to be overcome. Leaving aside arguments about which comes first, good tourist promotion requires trained personnel. This has been recognised in Mildura where the development of a substantial and expanding tourist industry has brought about the development of successful hospitality courses at Sunraysia College.

The survey conducted by Seidel revealed that the Riverland people did not identify hospitality as a training need. Coupled with local resistance to leaving the area for anything but apprentice training, existing demand is latent rather than actual. The estimate of student demand (Table 4) is based on the assumption that the new facilities at Berri will create an awareness of the value of training in the hospitality industry. Shetliffe (1986) indicated that attitudes to tourism training in the Riverland area were changing.

In the New South Wales part of the region, training in club management (Fraser, 1986a) and training for chefs (Murphy, 1986) are needed.

There is an area of training related to hospitality which has its base in the home rather than in industry. This usually involves home cooking and related activities. Nearly, but not all of this, is non-vocational and is outside the terms of reference of this report.

Quinn (1984) reported that units in home catering and management such as microwave cooking were needed at Wilcannia, White Cliffs and Ivanhoe, home science at Tibooburra and basic home maintenance at Menindee and Tibooburra.

Harkins (1986) and Borschmann (1986) commented on the absence of training in butchering in the area. However, it is considered unlikely that the demand for such training could justify the expense of providing facilities.

The Financial Review, (1986) quoting the Economic Planning Advisory Council (EPAC), reported a national shortage of chef/cooks. This suggests that if trained people are unable to obtain employment in the area, they would probably be successful elsewhere.

b) Business studies

The participation rate at the Riverland College of TAFE is high and this is expected to continue. Increased use of computers will add to the pressure on enrolments. It is expected also that shifting the programme to the Berri branch will produce an increased demand.

Fraser (1986) saw a short-term increase in demand in the Far-Western Area of New South Wales for secretarial studies, particularly with the increasing use of word processors and electronic typewriters. In the areas remote from Broken Hill, Quinn (1984) reported particular demands for typing, shorthand and bookkeeping in Wilcannia and Menindie.

McLeod (1986) saw a need for clerical training as distinct from accounting or secretarial. Such courses would involve simple bookkeeping (writing up cash books, bank reconciliation, trial balance), office procedures, receptionist training, filing and the use of simple office machines. All colleges list courses which would meet these needs.

Heuzenroeder (1986) saw a need for rural bookkeeping and training in computer use.

Cameron (1986) expressed a need for training in aspects of entrepreneurship such as small business management, cashflow, stock control and time management. Each of these could be met within the short course programme of each college in the area.

The Financial Review (1986) has indicated that there is a severe nationwide shortage of stenographer/secretaries. Again this suggests that any trained personnel who are unable to gain jobs in the area would probably be successful elsewhere.

c) Hairdressing and beauty therapy

There are about 30 hairdressing apprentices in the area at present and best estimates suggest that this may increase to between 40 and 50 in the years ahead.

Murphy (1986) estimated that there are about eleven apprentices in Broken Hill and at best one would expect this number to be static, although the local Adult Education Council (Kelly, 1986) suggested that the development of group apprenticeship could boost this to between 30 and 50.

Barnett (1986) commented on a need in the Western Riverina, while Quinn (1984) reported interest in the remote areas of Western New South Wales.

Melville and Seidel (nd) have estimated a demand for 338 part-time students in hairdressing in the tri-state area. This included an estimated 171 pre-employment enrolments.

d) Human Support Services - particularly for the elderly

Edgar (1986) advocated that the Kirby traineeship scheme should be expanded to cover human service work as well as technical vocational areas. Some families with children are desperate for child care. People on social security benefits, those living in poverty and with other sorts of disability, need a whole range of local support services. The growing aged population (nearly 8% of the 15 years and over population of Mildura is over 75 and nearly 5% of the Broken Hill population - over 2,000 people in all [Table B2]) require personal help and community support. Further Rayment (1985) reported that the older population in Renmark is expected to increase.

TAFE courses in these disciplines are a particular priority for areas with large unemployment and a high proportion of elderly people. For example, in Broken Hill, Southern Cross Homes have opened a large home for the aged which will employ over 100 people and Chylinski (1986) saw the need for courses for people working in residential care.

Seidel (1985) estimated a demand of 130 part-time students in the Riverland by 1991. Extrapolating this figure to Sunraysia, Broken Hill and Deniliquin gives estimated demands of 290, 130 and 100 respectively, that is some 650 part-time students overall.

A more conservative estimate of the demand for human support services can be developed from the projections of the Sunraysia Research and Information Centre which were reported by Sunraysia College of TAFE (1985). It was reported that 285 licensed child-care service places and 522 hospital beds for the elderly will be required in the Sunraysia region by 1996. Extrapolating for the whole area and assuming one employee for each eight places in child care and one for each three hospital beds for the elderly, the following figures emerge:

- there will be a demand for the training of between 10 and 15 people per annum for work in licensed child care centres.
- there will be a demand for about 1900 hospital and hostel beds for the elderly and this will require between 60 and 100 people in training in any one year.

The figures given in Table 4 are a compromise between the two estimates.

A further demand for training in this discipline could arise if the suggestion that Broken Hill become a relocation centre for people who have retired ever eventuates (Rothwell, 1985).

e) Nursing

Nurse training in Australia is at two levels - registered nurse and enrolled nurse, and until very recently most training has been in hospitals.

There is substantial resentment in the area that hospital-based training for registered nurses is being phased out. As all registered nurses are to be trained in colleges of advanced education, the registered nurse training programmes at the training hospitals in Mildura and Broken Hill are being discontinued. O'Neill (1986) said that the principal resentment was that nursing had previously been a profession in which local training was possible and now those interested in becoming nurses (girls predominantly) had to leave the region for training. Gambetta (1986) commented on a fear that lack of local training will lead to a shortage of nurses in rural areas. This effect may be being felt already as the Financial Review (1986) has published a chart prepared by the Economic Planning and Advisory Council (EPAC) showing that there is a severe shortage of general nurses.

f) Distributive services

Unlike the United Kingdom and the United States (Parkinson, 1976, 1982,) there is little training for those who are employed in shops. For example, the Distribution Trades Unified Vocational Preparation (UVP) in the United Kingdom provides training in methods of salesmanship and the organisation of distribution, merchandising and selling. McLeod (1986) commented that training for shop assistants was provided through Independent Wholesalers in Adelaide.

g) Animal care

There were some indications that there may be demand for a course in animal care, that is training for people working in cats homes, with animals for agistment and veterinary assistants (Florence, 1986).

h) Library studies

Based on the work of Seidel (1985), it is estimated that, if facilities were available, there would be a demand for about 150 places (i.e. 30 equivalent full-time) in courses in library studies. This demand was also pointed out by Borschmann (1986).

i) Floristry

In Victoria an apprentice course is available in floristry and in New South Wales a series of special courses are offered. No course is available in South Australia. There was some discussion on the possible demand for a course in the tri-state area, but the advice received was that the demand was probably insufficient.

7.2.4 Other training needs

a) Art and design

The bulk of any demand is expected to come from art/craft (for example silversmithing and pottery) and painting.

b) Clothing and textiles

Courses in clothing and textiles are popular in country regions and doubling of current enrolments by 1991 is anticipated. In the Western Riverina, Manser (1986) considered that training for clothing workers on industrial machines was desirable. Quinn (1984) reported an interest in stretchwear in White Cliffs and Tibooburra.

c) Music

The demand in this field is difficult to estimate.

d) Performing arts

Estimates for 1991 are difficult as 1985 is the first year in which a course has operated and this has been restricted to the Riverland. A new course for South Australian country colleges has been developed and will be offered for the first time in 1987.

e) Adult literacy and numeracy

The educational needs of adults with literacy or numeracy difficulties are difficult to quantify as they cut across a number of special programmes (for example those for migrants, Aboriginals, prisoners and the intellectually handicapped). Nevertheless, Seidel (1985) saw that there is sufficient demand from the adult population in the Riverland to justify an expansion. Houston (1986) commented that adult literacy and numeracy programmes were a priority need for many people living in remote areas as illiterate people often go to these places in search of employment. This is confirmed for the Far-West Region of New South Wales where, according to the Planning Division of the NSW Department of TAFE, there is a need for basic education (NSW DTAFE, 1986c). Crawford (1986) commented that this need applied to both black and white people.

f) Migrant education

Current enrolments in this programme suggest that it is under-provided and that there is a need for an increase. Houston (1986) commented that this was a particular need in remote areas.

g) Participation and equity program (PEP)

This replaced the Transition Programme in 1983.

The high level of youth unemployment indicates an important potential demand for youth-oriented courses. Much of this demand may be met by the proposed traineeship programmes, joint TAFE/school courses, pre-apprenticeship and pre-vocational programmes. Chylinski (1986) suggested that such courses should not be restricted to young people but should be available to the general community.

h) Matriculation level studies

There will be varying demands for these studies, but, whether any particular subject will ever have a demand which justifies a class is unknown. Florence (1986) pointed out that young unemployed may wish to return to TAFE to study at this level.

i) Secondary level education

The Broken Hill College of TAFE will almost certainly continue to provide the Joint TAFE - School Program. Parkinson et al (1986) reported that an increasing number of Year 12 secondary students study Department of TAFE subjects as components of the mix of subjects they undertake in the final year of schooling.

A Riverland District Schools TAFE Coordinating Committee (Williams, 1986) is charged with resolving the practical difficulties involved with the provision of TAFE programmes in secondary schools. The Senior Secondary Assessment Board of SA has as yet no mechanism for the recognition of TAFE subjects (Wilmott, 1986).

It is expected that there will continue to be a demand for provision of TAFE programmes for secondary level students. The actual format of provision may be impossible to predict, but the demand is guaranteed.

j) Aboriginal education

There is a demand by Aboriginals for special programmes right across the region. There are two extreme views about how this demand might be met. The Broken Hill Adult Education Council (Kelly, 1986) commented that Aboriginal people do not like being treated separately while Parkinson et al (1986) quoted the Elizabeth College of TAFE in South Australia as reporting that Aboriginal students experience extreme difficulty coping as a minority in a white class.

Crawford (1986) saw the need for training for Aboriginal people in their own culture e.g. Barkandjii studies.

k) Community languages and English as a second language

Programmes in these are provided in all colleges.

7.3 Higher education needs

Wallace (1985) stated that

- there is a need for courses which enable professional community members to update their qualifications. This would reduce the movement of such staff out of the area as they seek to gain these qualifications. Updated qualifications will provide equal opportunity for career advancement with metropolitan and larger rural centres.
- an extension of short courses is required to meet community needs for in-service professional education.

8. THE GAPS BETWEEN CURRENT (INCLUDING PLANNED) PROVISION AND NEEDS

Seidel (1985) identified 633 enrolments from the region served by the Riverland College of TAFE in other South Australian TAFE colleges. Of these, 410 (66.2%) were enrolled in vocational courses. The details for vocational courses are shown in Table 5.

In the Western Riverina Area lack of numbers has forced apprentices to move away as Echuca is the only place to which they can commute.

In Table 4 there is a comparison of the projected full-time enrolments in 1990 with the estimated number of student places available.

8.1 Primary industry

8.1.1 Wool courses

Courses are required in objective measurement of wool and in shearing. Redden (1986) noted that there was no provision for the continuation of the Rural Studies Certificate after students leave the East Murray Area School.

8.2 Secondary industry

8.2.1 Wine producing and processing

There are no college facilities in the region for teaching winery cellar workers and laboratory technicians. It is recommended in Section 9.1.2 that no facilities be provided.

8.2.2 Automotive and diesel

In plant mechanics, Broken Hill College of TAFE provides the first two years of the three year trade course (Broken Hill College of TAFE). The college is not equipped to train in all aspects of the third year of the course.

Riverland College of TAFE will have facilities for the training of first year apprentices only.

Table 5

Enrolments from the Riverland College of TAFE area in other South Australian TAFE Colleges by college and programme, 1983

PROGRAMME	COLLEGE										
	1	2	3	4	5	6	7	8	9	10	TOTAL
Agriculture & horticulture	-	19	18	-	-	-	-	-	-	-	37
Art and design	-	5	-	-	-	1	-	-	-	-	6
Automotive	-	46	-	40	15	-	-	-	-	2	103
Building	-	12	14	-	-	4	3	-	-	1	34
Business studies	8	91	-	-	1	-	-	5	4	1	110
Electrical & electronics	-	-	-	-	3	15	-	-	-	4	22
Health and care	10	-	-	-	-	-	-	-	-	-	10
Hospitality	-	-	2	-	-	25	-	-	-	-	27
Library studies	-	11	-	-	-	-	-	-	-	-	11
Mechanical engineering	-	14	-	-	2	14	-	-	14	-	44
Music	6	-	-	-	-	-	-	-	-	-	6
Performing arts	-	-	-	-	-	-	-	-	-	-	-
TOTAL	24	198	34	40	21	59	3	5	18	8	410

1. Adelaide (class-contact)
2. Adelaide (distance education)
3. Marleston
4. Croydon Park
5. Elizabeth
6. Regency College
7. Gilles Plains
8. Kensington Park
9. Panorama
10. Kingston

8.2.3 Building

With the facilities as planned, it will not be practical to provide specialist activity and basic trade subjects at Riverland.

8.2.4 Electrical and electronic engineering

It will not be practical to provide specialist activities and basic trade subjects at Riverland.

Adequate facilities will however be needed to provide training in the maintenance of low-voltage electrical plant.

8.3 Tertiary industry

8.3.1 Business and secretarial studies

Generally the region is well-covered by training in these disciplines. However, projected demand at Sunraysia and Riverland (Table 4) far exceeds the student places available.

8.3.2 Hospitality and tourism

Neither the existing facilities at Broken Hill nor the new facilities at Berri will be adequate to provide certificate level courses in tourism and hospitality.

There are no facilities for home cooking and related activities in the remote parts of the area.

8.3.3 Hairdressing and beauty therapy

There are no facilities for teaching hairdressing and beauty therapy in the area. Melville and Seidel (nd) have recommended that part of the Renmark branch of the Riverland College of TAFE be converted for this purpose.

8.3.4 Human support services - particularly for the elderly

There are no facilities for the teaching of TAFE courses in the care of the aged, care of the disabled and so on in the area.

8.3.5 Nursing

There are no college of advanced education facilities for training nurses in the area. However, before hospital-based training was phased out, both Broken Hill and Mildura hospitals trained registered nurses.

8.3.6 Distributive services

There is no training in these skills in the area.

8.4 Other training needs

8.4.1 Transition education and other programmes for secondary school students

Osborne (1986) commented that the pre-vocational programme offerings were inadequate as they provide for only a limited number of students. He advocated the offering of pre-vocational courses as an option to Year 12 with a consequent link into apprenticeship. This of course raises the question of the role of TAFE. There are many who question whether TAFE resources should be directed to secondary school students to the possible exclusion of adult clients. Perhaps a transfer of funding from secondary education to TAFE to finance year 12 students might be the answer.

9. THE MEETING OF THE GAPS IN CURRENT (INCLUDING PLANNED) PROVISION

If the delivery of tertiary education in the study area is to be systematic and rational, the area should be treated a single unit. Wallace (1985) suggested that the TAFE colleges should be developed as a mini-network similar to the larger networks existing in each state. By ensuring that each college offers a range of high local demand programmes and by arranging for each college to provide a number of unique courses to serve the entire area, the goal of a truly comprehensive TAFE programme in the area can be realised.

Consequently it is RECOMMENDED that the tri-state area be treated as a single unit in the purposes of delivery of TAFE programmes.

The means by which this could be achieved needs to be considered.

At least two broad options are available.

a) One is the development of the responsibilities of the current Tri-State Consultative Committee. This option is seen as very difficult administratively as there would be no one person responsible for the overall delivery of TAFE programmes in the area. Decisions would be in danger of being based in continual compromise and consequently the ideal of a single educational unit may never come to reality.

b) The second option is the development of a single multi-campus tri-state TAFE institution under one principal who would report to an area council made up of representatives of each constituent college councils and set up under the authority of the three state TAFE administrations and to whom the principals of the constituent TAFE colleges in the area would be responsible.

   This option probably requires special legislation in the three states but, even so, presents the least administrative difficulties.

It is RECOMMENDED that a single multi-campus tri-state TAFE institution be established under a principal who would report to an area council made up of representatives of each constituent college council and set up under the authority of the state TAFE administrations and to whom the principals of the three constituent TAFE colleges in the area would be responsible.

This recommendation is an adaptation of the proposal of the Loddon-Mallee Regional TAFE Board for a multi-campus "North Western" Regional College to serve Mildura, the tri-state area, the Mallee and the Mid-Murray (Map 3). The essential features of the implementation guidelines for this proposal are:

- the campuses of the college are equal partners - each is afforded equal rights of consideration to the resources of the college.
- the membership of the council of the college will be reflective of the demographic and geographic structure of the area served by the college.
- each campus of the college will have a committee which makes recommendations to the council (Loddon-Mallee Regional TAFE Board, 1986a).

Planning and administrative procedures which are RECOMMENDED are

i) The area council should develop a rolling triennial plan for the area. This report should form the basis for the first plan.

ii) The plan should include details for the triennial period covering:
  - the existing programmes to be maintained and the associated costs;
  - the programmes to be initiated or varied together with the proposed location and the associated costs for capital works, equipment and staffing;
  - a dissection of the funds sought from the three state TAFE authorities.

iii) The plan, after endorsement in each college through the normal procedures of that college, should be forwarded to each state TAFE authority for approval.

iv) After the plan, with any amendments has been approved by state TAFE authorities, it should be implemented by the principal of the multi-campus tri-state TAFE institution.

v) The overall monitoring of the implementation of the plan should be the responsibility of the principal in consultation with the area council.

The recommended procedures could not be implemented without some costs. There would need to be a principal, planning officer and secretarial staff together with office accommodation and running costs. An estimate is $150,000 per annum.

9.1 Meeting of gaps by co-operation in the use of current (including planned) college facilities (including residential)

It was this question which brought about this project. There has been a growing awareness within TAFE of the advantages of co-operation between educational providers in reasonable proximity to each other but separated by state borders. Such co-operation also has public support. In a survey undertaken by Seidel (1985), it was shown the Riverland residents tended to favour Mildura rather than Adelaide for vocational programmes which cannot be provided locally. Fielke (1986) put it a little differently. All things being equal, Mildura was acceptable to Riverland residents, but he did not want the movement to be all one way. Redden (1986) considered that parents of young TAFE students would accept the idea of them going to Sunraysia for their studies.

The need for co-operation in the area will be on-going even though there are plans for additional facilities. For example, although the new facilities at Berri will allow Riverland College to service many of the technical needs of the area, it is not intended to provide apprentice courses for the present at least.

Nor should co-operation be restricted to college facilities only. It should also be appreciated that there may be non-college (for example, factory, farm) facilities which may be available and suitable for the conduct of courses. Where this is so, no funds should be expended on duplicating educational facilities. This view is supported by the Loddon-Mallee Regional TAFE Board which recommended reducing the demand for additional resources by substantially increasing the use of industry and community resources for TAFE provision (Loddon-Mallee Regional TAFE Board 1986b).

9.1.1 Primary industry

It is RECOMMENDED that the farm at the Sunraysia College provide for the gaps in primary industry training needs of the area. In effect, this, in addition to the residential facilities, will meet the desire for a pastoral college expressed by the Pastoralists Association of the West Darling (Heuzenroeder, 1986).

It is further RECOMMENDED that an elective for greenkeepers be introduced into the apprentice course for gardeners at the Sunraysia College of TAFE.

Training in the packaging and presentation of citrus is another matter. Dixon (1986) offered the use of one of the Berrivale factories in Berri. It is RECOMMENDED that this offer be investigated.

9.1.2 Secondary industry

a) Wine producing and processing

Weeks (1986) warned against the provision of lavish new facilities for teaching wine industry workers. He pointed out that current industrial plant was being used in the current offering of the Winery Cellar Procedures Certificate jointly run by the Riverland and Sunraysia colleges.

It is RECOMMENDED that the Winery Cellar Procedures Certificate continue to be offered jointly by the Riverland and Sunraysia colleges of TAFE to serve the whole area. It is further RECOMMENDED that the current use of industrial plant be continued and that no new educational facilities be provided for courses using those industrial facilities.

b) Automotive and diesel mechanics

Seidel (1985) estimated that the demand for automotive apprentice training in the Riverland region will be of the order of 30 full-time equivalents by 1990. The facilities at Berri will be adequate for the training of first year apprentices only. It is RECOMMENDED that second and third year automotive apprentices in the Riverland region attend Sunraysia College of TAFE.

There is a need throughout the area for the training of plant operators. The present operation at Sunraysia should be sufficient to serve the whole area and this is RECOMMENDED.

c) Building

By 1991 up to 50 part-time students per year from the Riverland region would be expected to require training in building at the basic trade level or above. (Seidel, 1985). As the facilities planned at Riverland are not adequate for this level of training, it is RECOMMENDED that carpentry and joinery apprentices in the Riverland region be trained at Sunraysia College of TAFE.

Further, it is RECOMMENDED that the existing training in painting, decorating and signwriting currently provided at Broken Hill College of TAFE serve the whole area.

d) Electrical, electronics and instrumentation

By 1991, up to 40 part-time students per year from the Riverland region will be expected to use facilities at Sunraysia College. As no facilities in teaching electrical trades are planned for Riverland, it is RECOMMENDED that electrical apprentices in the Riverland region be trained at the Sunraysia College of TAFE.

It is RECOMMENDED that the electronics facility at Sunraysia College should be used for instruction in instrumentation for the whole area.

e) Engineering trades

There will be ample accommodation in the area to teach engineering trades. The new Riverland facility will be adequate for the training of first year apprentices in fitting and turning and welding. It is RECOMMENDED that second and third year fitting and machining and welding apprentices in the Riverland region attend the Sunraysia College of TAFE.

The only training in boilermaking at the trade or post-trade level is at the Broken Hill College of TAFE. This facility should be able to meet all the training demands of the area and it is therefore RECOMMENDED that the existing training in boilermaking provided at the Broken Hill College of TAFE serve the whole area.

9.1.3 Tertiary industry

a) Tourism and hospitality

It is RECOMMENDED that the resources at Sunraysia College should be used for all trade and higher level programmes in tourism and hospitality except the existing Home Economics Certificate and Home and Food Service courses which should continue at Broken Hill and for courses in club management which also should be provided at Broken Hill. The new Berri workshop complex and the existing Broken Hill facilities should serve the short course needs of those parts of the area.

It is difficult to estimate the demand for trade and higher level courses partly because of the present attitude of training for tourism in the Riverland area. The current estimate from there shown in Table 4 is based on the 27 current enrolments at the School of Food and Catering at Regency College of TAFE.

b) Nursing

Originally the change in training arrangements for registered nurses (Section 7.2.3 (e)) did not change the hospital-based training for enrolled nurses. However Barnard (pers. comm. 1986) has reported that in New South Wales some of the training for enrolled nurses is to be undertaken in TAFE colleges on a block-release basis (two blocks of six weeks in a twelve months training programme). As yet there has been no negotiation for advanced standing in the registered nurse course for those who qualify as enrolled nurses.

Considering the concern at the loss of nurse-training facilities in the area, Broken Hill, Riverland and Sunraysia Colleges of TAFE should undertake the college section of the training for enrolled nurses and this is RECOMMENDED.

c) Animal care

It is difficult to estimate a demand for a programme such as this, but it is certain that one centre would be sufficient to service the whole area. The facilities (including residential) would make Sunraysia the most appropriate place for provision. It is RECOMMENDED that courses in animal care should be conducted at the Sunraysia College of TAFE.

d) Library studies

The Sunraysia College of TAFE has by far the best college library in the area. It is RECOMMENDED that courses in library studies be provided at Sunraysia College of TAFE.

e) Child care

There is a small on-going demand for the provision of a Certificate of Child Care Studies in the area. It is RECOMMENDED that such a certificate be provided at the Sunraysia College of TAFE and that the existing child-minding facilities be used for that purpose.

The Riverland College of TAFE plans to introduce the Certificate of Child Care studies on a part-time basis in 1987. It is fundamental to this paper that the flexibility to provide courses on demand should not be restricted, but, considering the existing facilities at Sunraysia, no request for facilities at Riverland could be supported.

The Planning Division of the New South Wales Department of TAFE reported that there had been requests to establish a Child Care Certificate at Broken Hill College of TAFE. It concluded that, based on employment prospects, a full-time course is not viable (NSW DTAFE, 1986).

9.1.4 Other training needs

a) Aboriginal education

The question is whether or not separate TAFE facilities should be provided for Aboriginal people. The extremes of the argument are indicated in Section 7.2.4(j) above. It is RECOMMENDED here that neither extreme should be adopted. Rather, Aboriginal people should have the opportunity for separate instruction until they gain sufficient confidence to join integrated classes. No additional facilities would be needed.

Whichever way the delivery of Aboriginal education programmes is approached, Fowler (1986) maintained that the determination of needs must be through a separate communication network. This process can be a lengthy one as trust between the various parties must be established. In places where TAFE colleges have engaged community contacts for identifying TAFE needs, Aboriginal contacts may be necessary if Aboriginal people are to be persuaded to enter education programmes.

9.2 Meeting gaps by the provision of new facilities

The provision of new facilities in TAFE in rural areas is necessarily a political as well as an educational question. It was clear that while people could agree that a single facility was warranted to meet the training needs of the area in a particular location, there was not necessarily agreement as to where it should be placed. Parochialism and vested interests understandably raised their heads. An example of the type of vested interests which attempts to influence provision of TAFE resources is reported by Jones (1985). He said that plans to create a multi-million dollar Wodonga TAFE College would be fought tooth and nail by teachers at the Albury TAFE College. They claim that millions of dollars could be saved by upgrading the Albury College instead of creating a second college at Wodonga.

For the tri-state area, objections to centralising facilities were best articulated in the argument that TAFE opportunities in the area would be put out of balance by locating all the new facilities in one place.

There is a further, and not totally unrelated objection, which is that people object in principle, to people and young people in particular being expected to leave their home in order to study. It is manifested in a view that, if a local facility of appropriate quality cannot be provided, it is better for students to struggle along in an inadequate facility rather than leave.

There is a further manifestation of the unwillingness of young people to leave home which is seen when they drop out of study when there are no local facilities. Redden (1986) pointed out that in the Mallee area south of Loxton very few of the East Murray Area School students who are undertaking the Rural Studies Certificate go on with studies when they leave school. This is because there are no local TAFE facilities and there are strong family feelings that 16 and 17 years olds should be at home. However, as was pointed out in the introduction, it must be faced that the provision of facilities in remote areas is often impossible.

The Riverland Development Council (Shetliffe, 1986) is very concerned with the retention of young people in the Riverland area as it considers the place of TAFE in its planning for the area. It sees better employment opportunities arising from proper planning generating more training demand which, in turn retains more young people in the area. This may well be the long-term outcome but, in the short-term, it is no justification for imposing second grade training on young people with the purpose of retaining them in the local economy.

In this discussion a balance is sought between educational rationalism and political reality. The recommendations suggest a distribution of any new facilities between the three principal colleges, while maintaining a rational approach to the provision of educational services.

a) Hairdressing and beauty therapy

Present proposals for the Riverland College of TAFE include plans for a hairdressing facility. This should serve the whole area with courses for basic trade, post-trade and pre-vocational student groups and with a further responsibility for co-ordinating branch courses in hairdressing, cosmetology, grooming and deportment.

Melville and Seidel (nd) have reported that the reception to the concept of local training by Riverland employers has been very positive. In Broken Hill, where the training needs of hairdressing apprentices are met by correspondence courses, attendance at courses in Adelaide or employer-training, the reaction was positive, although there were reservations about the costs and time involved in travel to Renmark. In Sunraysia, the training needs of hairdressers are met by the Flagstaff College in Melbourne. Reaction to the proposal to train in the Riverland again has been positive. A major concern of hairdressers outside of South Australia was the acceptability of South Australian registration requirements in Victoria and New South Wales (see Section 1.2). Melville and Seidel stated that there appears to be no insurmountable barriers. They observed that a number of Broken Hill apprentices are trained in South Australia already and that some Victorian apprentices are receiving their basic training at Mt Gambier.

It is RECOMMENDED that the facilities for hairdressing proposed for the Riverland College of TAFE serve the whole area at an annual recurrent cost of $75,000.

b) Plant mechanics

This is not an apprenticable trade in Victoria or South Australia and no training is provided. In New South Wales, where it is an apprenticable trade, training in the region is limited to the first two years. The maintenance of the plant and equipment used in earth moving and associated activities is an important skill for this area regardless of whether it is provided through an apprenticeship or not. It is RECOMMENDED that the equipment at Broken Hill College of TAFE should provide training for plant mechanics for the whole area.

Consistent with the general principle of using existing plant where possible, the cost of implementing this recommendation may be reduced if the training were done in the mines plant. Byrne (1986) indicated that this might be possible.

c) Distributive services (retailing)

This is a skill for which there is little provision for training in Australia, but for which provision is relatively common in the United States and the United Kingdom.

Parkinson (1976) reported on a facility in Phoenix, Arizona. There is a model supermarket where students are taught the use of several types of cash registers, adding machines and calculators, the identification of errors in cheques and price-tags, the prevention of pilferage, the sale and wrapping of items, the preparation of accounts, the collection of money and the giving of change. Cameron (1986) would add customer contact. It is RECOMMENDED that a facility to serve the whole area be provided at Sunraysia College of TAFE which is in the largest retail centre of the area (Mildura).

d) Human support service - particularly for the aged

TAFE courses in human support services specifically for the aged do not exist in South Australia and New South Wales, but courses in domiciliary and residential care of the aged are provided in Victoria. The demand for trained people for working with the aged in particular is likely to increase. It is suggested that the South Australian Health and Care Certificate which is offered already at Riverland might be the most suitable for the purpose.

It is RECOMMENDED that a course equivalent to the Health and Care Certificate provided by the South Australian Department of TAFE be offered at each college in the area and that suitable facilities be provided where necessary.

e) Business and secretarial studies

Projections (Table 4) estimate that there will be a shortage of space for business and secretarial studies at Sunraysia and Riverland Colleges by 1990. It is RECOMMENDED that sufficient student places for 100 full-time equivalent students in business and secretarial studies be provided at both Sunraysia and Riverland colleges of TAFE.

9.3 Coordination of programmes for people living remote from college campuses

A number of strategies for delivering off-campus programmes are discussed below namely

- study centres
- residential classes
- branch classes
- mobile units
- print and other home media - based distance education
- distance education
- school of the air
- the new technologies

or combinations of the above. This concept of combinations of strategies can be extended by combining any or some of the above with on-campus class attendance. Hence, for many students the distinction between on-campus and off-campus education may be blurred.

It is apparent that these delivery strategies cannot be allowed to operate independently of each other, but that the strategies for the delivery of programmes to people who live remote from college campuses should be coordinated across the area.

The Sunraysia College of TAFE has a coordinator for off-campus courses (both branch and distance) (Lyons, 1985) and this principle should be extended to all colleges in the area.

It is RECOMMENDED that each college in the area appoint to the staff an off-campus programme coordinator to organise the provision of TAFE services to people in remote locations or who, for some other reasons, are unable or unwilling to attend classes. Shetliffe (1986) pointed to the need for these coordinators to have a high profile and credibility in the region.

It is further RECOMMENDED that these coordinators meet regularly under the direction of the principal of the multi-campus tri-state TAFE institution to ensure that the total provision in the area is made in a rational and economic way.

Chylinski (1986) made the point that potential students find it very difficult to obtain course information for any course outside their own state systems. The provision of such information should be the responsibility of the off-campus programme coordinators.

It is all very well to give the off-campus programme coordinators this responsibility, but it is another thing to give them the tools with which to discharge the responsibility.

In the United Kingdom this has been faced by the establishment of an Education Counselling and Credit Transfer Information Service (ECCTIS) which is a data bank of course information from across the nation. Parkinson et al (1986) have reported on a similar need in Australia and have recommended that the TAFE National Centre for Research and Development be commissioned by the Evaluative Studies Steering Committee (ESSC) of the Commonwealth Tertiary Education Commission (CTEC) to undertake a feasibility study of setting up similar services in Australia. It is RECOMMENDED that this study be supported.

These coordinators will be unable to service their own regions without advice. The branch committees recommended in Section 9.6 should be used for this purpose.

9.4 Study centres

The concept of a study centre to provide facilities for private study using a variety of media is well-developed in the area. Sunraysia College of TAFE is a study centre in itself (Section 6.7.2) while the facilities at the Robertson Centre and at Berri are capable of being developed to a satisfactory standard.

Therefore there are study centres in all towns with TAFE colleges in the area except Deniliquin and it is RECOMMENDED that one be established there.

It is RECOMMENDED that the services and facilities of the study centres should be funded so that they might be developed along the lines of the Northern Territory External Studies Centre (Advanced Education) (CCCA, 1985). The services which should be under the direction of a qualified professional should include

- assistance with applications for enrolment;
- course counselling - assistance should be available for course selection and advice on study;
- tutorial service in consultation with the providing institutions where the numbers of students warrant it. [Included in this should be the arrangement of lectures through the telecommunications network using an electronic classroom and interactive television];
- the organisation of the provision of higher education courses under contract;
- library services;
- computing facilities;
- examination services.

The recurrent cost is estimated by Northcott and Shapcott (1986) to be $200,000 per annum each i.e. $800,000 per annum for the tri-state area. A statement of recurrent costs for the Northern Territory External Studies Centre is shown in Appendix F.

In their five rung hierarchy of study centres, Northcott and Shapcott, have described the type of centre recommended here as first level (Section 6.7).

The following guidelines are suggested by Northcott and Shapcott (1986). The host TAFE college should:

- accept responsibility for providing cross-sectoral services;
- accept a brokerage role which includes public relations in the local communities and negotiation with distance education providers across the sectors;
- propose staffing arrangements which ensure the commitment and professionalism of the co-ordinator of the centre;
- accept the role of regional outreach centres;
- ensure that the centre is suitably equipped to participate in an electronic information network.

The Joint Select Committee (Parliament of NSW, 1984) endorsed such a role for the Robinson Centre in Broken Hill.

9.5 Meeting the gaps by residential facilities

Houston (1986) commented that different people would put different priorities on residential facilities. For some people they would not be appropriate because they would be perceived as too difficult to get to.

There was some discussion about using the residential facilities at Sunraysia College of TAFE to meet the needs of the Riverina. As has been pointed out in Section 1.1, the Deniliquin region is more closely related to Echuca and these two should be considered as a single region. Barnett (1986) considered that the residential facilities at Sunraysia College of TAFE might be suitable for students in the Deniliquin region, except that Mildura is difficult to get to from the Riverina.

An important use of residential facilities is for apprentices who live beyond commuting distance of a college and who are being trained on block release. The use of these facilities is not without its opponents. Murphy (1986) commented that employers in Broken Hill are reluctant to be involved in block release and that students living in Broken Hill are reluctant to go away from home for training. According to the Local Adult Education Council, the town has such a strong family network that there is trauma in separation (Kelly, 1986). This is, of course, only one side of the argument. As Gambetta (1986) pointed out, the horizons of the student are greatly extended by the opportunity to study away from home.

A student at the Riverland College of TAFE (Cass, 1986) expressed concern at the lack of residential facilities for students in the Certificate in Farm Practice (on-farm training scheme) who undertake their training on block release.

It is unlikely that, with the existing residential facilities at Sunraysia, residential facilities will be attached to any other college in the area. An answer which present itself is the use of the Mildura farm and residential facilities for those students who need to live away from home to undertake a Certificate in Farm Practice. Rollbusch (1986) saw no difficulty with this.

At present no classes designed exclusively for residential students are offered at the Sunraysia College of TAFE. It is RECOMMENDED that this policy be reconsidered and that the possibilities of a series of residential short courses be investigated. Gambetta (1986) suggested that a programme of residential short courses with an emphasis on technological change be considered.

The Sunraysia College of TAFE (1986) claimed that residential accommodation must be extended to enable the college to take more students from outlying areas.

9.6 Meeting the gaps by branch classes

Branch classes using local facilities with either local or itinerant staff will continue to be a most important way of meeting the needs of people who are unable to attend classes at main campuses of TAFE colleges. This is particularly true of programmes where the equipment needed is minimal or relatively inexpensive.

Business and secretarial studies are particular examples of programmes where needs can be met relatively easily through branch classes. In particular the needs identified by Quinn (1984) for Menindee and Wilcannia could be met in this way.

Similarly much of the demand for art/craft programmes could be met in a similar way.

It is impossible to identify and quantify demands for branch classes. Rather it is important to identify the means by which the demands can be met as they change over time.

As suggested above (Section 7.1), this is done best by giving local communities a greater degree of autonomy in selecting TAFE programmes. It is RECOMMENDED that branch committees consisting of local people be set up in each centre where branch classes might be provided and that a local contact person who would liaise with the providing college be appointed in each case. The function of the branch committees would be to advise the college off-campus programme coordinator through the local contact person of any matter relating to TAFE in the local community.

Fox (1986) reported that information on branch class needs at the Sunraysia College of TAFE is obtained by four methods:

- an annual meeting between the college coordinator and outreach officers;
- suggestions made by local committees;
- requests from students;
- ideas from the outreach officers.

Fowler (1986) often arranges community meetings in conjunction with School of the Air workshops.

Goodhew (1986) said that the School of the Air is divided into ten administrative areas and mini-schools are held to serve each administrative area. These are infrequent but large - up to 130 people have attended these meetings.

Workshops are much smaller with children of about ten families being brought together. Each workshop group has a parent representative coordinator.

Although the employment of local people, where properly qualified, is the most economic way to service branch classes, in many cases such people will not be available. It is RECOMMENDED that the best answer to this is itinerant staff who are organised by the college off-campus programme coordinators. It has been recommended (Section 9.3) also that all colleges in the study region should have these coordinators.

A principal need for itinerant teachers for the teaching of basic literacy and numeracy has been identified. Much of this teaching will need to be on a one-to-one basis.

Forward (1986) advocated the use of itinerant lecturers to provide post-trade training in the Riverland area. In most cases the equipment needed is minimal and could be brought by the lecturer. Forward mentioned hydraulics, industrial maintenance and specialist welding in this context.

9.7 Meeting the gaps by mobile units

The various experiments of the three states in mobile units have generally been seen as successful and there is almost universal support for them. Although there is a variety of opinions, the majority does not see the carting of a classroom about as the most effective means of providing programmes through mobile units. The majority opinion is that the mobile facility should store the equipment, provide power and be designed around a one man operation so that setting and closing up involves minimum labour (Snell, 1986). Classes can be held in all sorts of places and, if nothing better can be found, a tent may be all that is necessary. It is RECOMMENDED that mobile facilities be developed which serve as a source of power and a store for equipment.

This principle has been accepted by the Australian Automotive Industry Training Committee which has been established to develop training in the retail motor industry (Ziniak, 1986). It has developed a mobile unit which is designed to carry equipment to provide training in the workshop or elsewhere to enable the industry to keep abreast of technological change. If no suitable venue is available, a canopy is carried to provide a classroom area. The cost of the unit was estimated to be $50,000 including equipment and teaching manuals.

The uses to which mobile classrooms might be put are endless and it is intended here only to nominate those uses which have been identified during the research. These are

- welding and metal fabrication - a range of rural activities;
- wool classing and shearing - provision of owner/classer refresher courses in cooperation with the Wool Cooperative and of courses in shearing and for shearing-shed hands;
- rural studies - short courses in farm management and building and plumbing skills (windmills, troughs);
- basic farm and plant maintenance - with emphasis on diesel engines;
- electrical maintenance - particularly low voltage plant;
- home and family programmes - microwave cookery;
- chinese cookery;
- basic hairdressing and cosmetics;
- basic home maintenance, dressmaking and related activities;
- computing - simple business and farm applications of the computer.

Lyons (1986) reported that Sunraysia College has arranged to borrow a caravan from Footscray College of TAFE. This has been equipped with computers and is being tested in the Sunraysia region.

The courses provided from mobile units will not, in general, lead to formal certificate awards. The information is the essential element. In fact Trotter (1986) suggested that too much complexity in programmes should be avoided as complexity requires too much equipment.

Although mobile units can be re-equipped as necessary, it is RECOMMENDED that separate mobile units be fitted out for each type of programme to be offered. These units could then be on circuit across the whole area serving as nearly as possible the needs of a particular remote locality before moving on. It is RECOMMENDED further that five additional units to those available already be provided - welding and metal fabrication, rural studies, basic farm maintenance, basic home maintenance and computing. The estimated cost is $250,000.

Timetabling would need to be sensitive to the economy of the particular area for example, in pastoral areas, shearing time should be avoided as should harvest and seeding times in grain areas. A very suitable time in many places would be when School of the Air mini-schools and workshops are being held (O'Connor, 1986).

TAFE authorities can find out through the coordinators the types of programmes which would best serve the parents at a particular workshop and the timetables of the specialist mobile units could be adjusted accordingly.

It is RECOMMENDED that the units be on circuit across the whole area serving as nearly as possible the needs of a particular remote locality before moving on.

9.8 Meeting the gaps by distance education

The principal administrative means by which distance education programmes will be delivered will continue to be through the distance education institutions which already serve the tri-state area (Section 6.6). It is highly desirable that isolated students throughout the area have the opportunity to enrol in the courses of their choice regardless of state boundaries. Restrictions such as those which apply to interstate studies at the NSW External Studies College of TAFE should be removed (Section 6.6.1(c)).

It is RECOMMENDED that TAFE students in the study area be able to enrol in the distance education institution of their choice regardless of state boundaries.

In the provision of programmes, the distance educator will choose the medium or combination of media which serves best the interests of students. Many of the possibilities are discussed below. The best decision most often would be a combination of media.

Fallon (1986) recommended that criteria for the selection of media should be established and that these criteria should include their relevance to the student client group and the language and literacy formats which reflect the cultural, social and economic backgrounds of the group. This recommendation is discussed further in Section 10.5.2.

The media available for distance education is shown in Fig. 1 (Keegan, 1980).

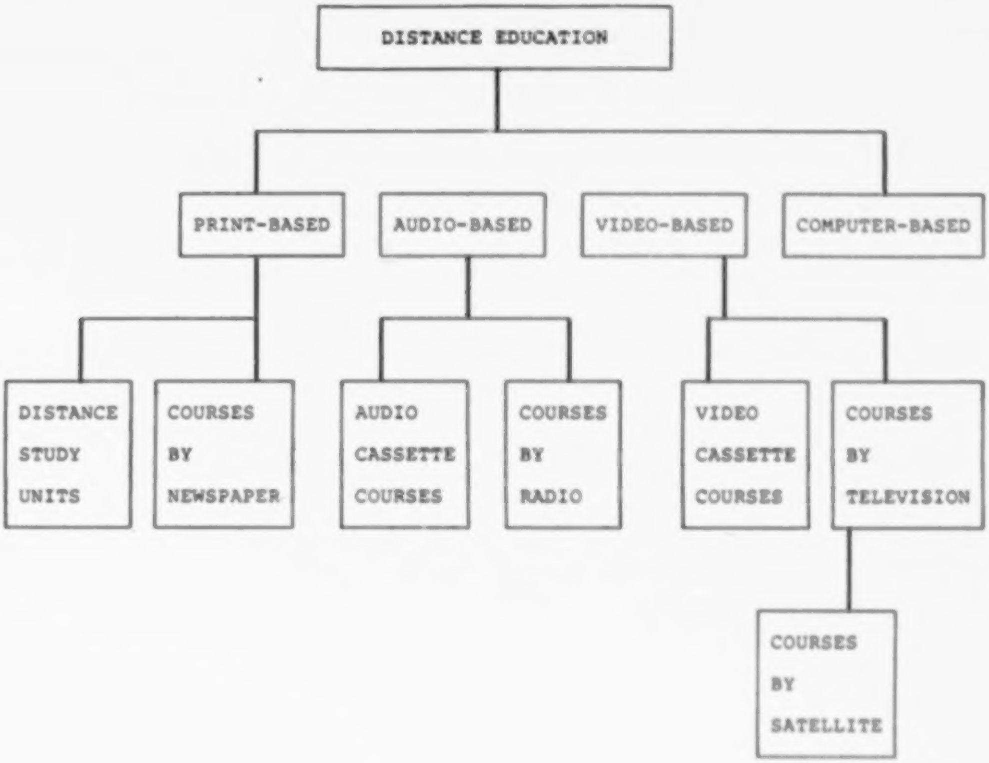

DISTANCE EDUCATION
PRINT-BASED
AUDIO-BASED
VIDEO-BASED
COMPUTER-BASED
DISTANCE STUDY UNITS
COURSES BY NEWSPAPER
AUDIO CASSETTE COURSES
COURSES BY RADIO
VIDEO CASSETTE COURSES
COURSES BY TELEVISION
COURSES BY SATELLITE

Figure 1 Forms of distance education distinguished by the medium which is the basis of the learning materials

9.8.1 Print-based

By far the great majority of distance education programmes are print-based and will remain so. Keegan (1980) maintained that a real disservice has been done to the field of distance education by over emphasis on terms like 'university of the air'. He saw exceptions to the use of print-based material only in regions where there is traditional reticence about correspondence-type programmes. Yet, as Fallon (1986) pointed out the work environment will continue to be dominated by electronic media. Therefore, print-based courses are increasingly being supplemented by audio-based and video-based material.

a) Micrographic technology

In using print-based material, Ausburn and Ausburn (1986) commented there has been a problem for a long time in providing students with high quality colour graphic or pictorial material. This problem has been overcome by the use of a small, hand-held, collapsible microfiche viewer in conjunction with colour microfiche.

9.8.2 Audio-based

These courses are frequently cost-effective, can be used by people with literacy problems and may be a successful method of teaching languages.

Included in this are courses by radio which Parsons (1986) saw as being of increasing value as the geographically isolated become to recognise the potential of distance education in enabling them to continue learning.

a) Audio-tape technology

As pointed out in Section 6.6.1(e), the disadvantages in the broadcasting of educational programmes might be overcome with the use of audio-tapes. Hurley (1972) claimed that the main advantages of the audio-tape medium were:

- geographic independence, the ability to reach out of the radio transmission area;
- time independence - can be played whenever the student wishes;
- the ability to stop, pause and replay;
- the ability to go beyond just taping radio courses and developing taped courses wanted by groups too small to warrant radio broadcast.

b) Broadcast radio technology - School of the Air

The School of the Air in Broken Hill is well established for primary school education. Goodhew (1986) pointed out that the School of the Air provides a three-way approach to distance education:

- correspondence programmes consisting of written, audio and video material;
- voice support through the radio. This is three way - teacher to student; student to teacher; student to student;
- field services. These consist of home visits, mini-schools and workshops and are currently the area of greatest development (see Section 9.6).

The school operates from two studios on two pairs of frequencies, one of each pair for long distance and the other for short distance. Hence it is possible to conduct two activities simultaneously. It does not transmit between 12.10pm and 1.00pm nor after 3.00pm except on Tuesdays and Fridays.

Atmospheric conditions make effective transmission impossible at night. This limits the time available to TAFE in winter to six sessions per week (Mondays, Wednesdays and Thursdays) between about 3.00pm and 4.30pm. In summer the effective transmission period available would be longer.

All students of the School of the Air have a transceiver, television and video-recorder on loan. In addition, many people own private sets. As a result, the penetration of the School of the Air among people in the areas remote from the principal towns is quite large.

Its use in TAFE has scarcely been tapped. O'Connor (ud) has done some work in introducing on-air sessions for adults from the Robinson Centre of the Mitchell College of Advanced Education.

Although perhaps secondary to the more flexible use of tapes, radio broadcasting is an area of great potential development. The NSW Department of TAFE has pioneered the use of radio curriculum officers and it is RECOMMENDED that one be appointed to work with the School of the Air to provide suitable vocational programmes to people in the service area of the school at a cost of $50,000 per annum. A suggested duty statement is provided in Appendix E. A large degree of the cost is used in travel because potential students will need to be well acquainted with the radio curriculum officer.

9.8.3 Video-based

The basic educational content of a course is broadcast on television or contained on video-cassettes. Some printed materials containing background, further reading and assessment procedures are often supplementary to the course.

9.8.4 Computer-based

Ausburn and Ausburn (1986) stated that computer technology is one of the fastest growing and developing technologies currently available for instruction. Computers can operate instructionally in several different modes, including:

- drill and practice;
- tutorial;
- simulation and problem solving;
- data-base networking;
- work-related training and practical skills (for example, word processing, data processing).

The emphasis in their use is moving from the first two to the others.

9.8.5 Utilisation of video-based and audio-based equipment

Ausburn and Ausburn (1986) commented that the number of VCR units and microcomputers currently in individual homes and offices is large and increasing. These privately owned video and computing systems should be seen as major delivery options for education, particularly for those in remote areas. They recommend that a survey should be conducted to determine the quantity and nature of video and computing equipment available in homes as a basis for determining the feasibility of developing suitable distance education materials for home use. Some work on this has been done by Holzknecht (1986) who found that VCRs tended to predominate in isolated areas where many distance education students are found.

9.9 Meeting the gaps with recent developments in the use of telematics

Jevons (1985) described his educational utopia for the future as one in which all subjects are available anywhere anytime in a choice of modes. That is, the student can choose not only what he wants to study, where he wants to study, when he wants to study, but also how he wants to study. Whatever he wants to do, he will be able to do by computer-based education, perhaps with a videodisc, or through well-designed and printed study guides which promote interaction between the text and the student, or by lectures or by listening to an audio tape.

A possible example of this is provided in the submission of the UFSO of SA to SACOTAFE (UFSO, 1986). Even though TAFE can provide courses almost at the farm gate for many people, there are still a lot of potential clients who are isolated. The advent of improved communication systems, such as videotex and satellite technology, provide tremendous potential for reaching out.

The Commonwealth Government wishes to ensure that the maximum use is being made of existing facilities. In doing so, it notes that increased participation and equity in tertiary education need not be restricted to conventional patterns of classroom-based instruction.

9.9.1 The telephone

Cox (1985) coined the term 'tele-education' which he sees as the transmission of voice either in the conference mode or not, data between computers or facsimile (text and pictures) between appropriate terminal equipment. Transmission may be either over the public switched network or via private leased lines.

The essential role of Telecom is to provide telecommunications point to point, or point to multi-point in a limited conference mode of up to ten points with audio conferencing.

Ausburn and Ausburn (1986) reported on one successful use of telephone technology in distance education in Australia. This is the Charlton Pilot Project in which Telecom and the Country Education Project of Victoria investigated the use of teleconferencing in seven small secondary schools. The system could link groups together and could also link one group to an external source. Although some problems were encountered, teachers considered that these could be overcome with experience.

Redden (1986) indicated that the East Murray Area School was part of a similar tele-education experiment involving Keith and Kangaroo Inn Area Schools. In this experiment students in each school and the external studies lecturer at the Adelaide College of TAFE are inter-connected by telephone.

No specific recommendations on the use of the telephone are made for the tri-state area. However general recommendations are made in Section 10.5.2.

9.9.2 Video conferences

Although this uses the telephone system, it is treated separately principally because of its high cost. Full 'confravision', that is full moving picture and colour would cost upwards of $1/2 million for the studio alone, plus transmission costs which are high.

Two options to the very expensive "confravision" are available.

Parkinson (1976) reported on the Appalachian Education Satellite Project in which high quality inservice training courses are distributed by television from a central source. The classroom is equipped also to receive and transmit sound by two-way radio.

Another option is that of the Oklahoma Higher Education Television Instruction System reported on by Ausburn and Ausburn (1986). This system makes use of television plus a talk-back facility provided by telephone.

9.9.3 Videodisc storage

Ausburn and Ausburn (1986) stated that the videodisc offers an outstanding capability as an interactive instructional device.

The player for the videodisc is a machine with a laser beam which reads the track of a videodisc, and a micro-computer which converts digital data on the videodisc into picture and sound via a closed circuit television. A videodisc represents one million pages of full text per side (i.e. 3,000 times the capacity of a microfiche). In other words it is a high density storage medium. Used interactively in random access mode, the videodisc can take several hours to use.

The interactive videodisc offers enormous potential for sophisticated video programming in education. The viewer interacts with the video program by selecting what he wants to see and converses with the program. The program offers the user a number of options.

9.9.4 The electronic classroom

Fallon (1986) described the facilities of an electronic classroom which include:

a) an electronic whiteboard and monitor;

[This is a whiteboard constructed to sense images traced on the surface. These images are transmitted to a remote location where a matching image is produced on a TV monitor.]

b) slow scan video camera and receiver;

[This is a system to scan a still visual image (photograph, chart etc.) for a display on a remote TV receiver.]

c) Facsimile machines;

[These are machines which scan still visual images for reproduction as paper copies at a remote location.]

d) Access to Videotex;

[This is access through the existing telephone network to information stored on central computers and displayed on a remote microcomputer VDU or TV receiver.]

Given appropriate teaching staff and support material, such facilities would provide a powerful teaching medium. Instantaneous voice and visual interaction between participants at remote locations will provide strong motivation. This will be particularly important if the participants are hostile to traditional teaching methods.

It is RECOMMENDED that each of the study centres in the area be equipped with an electronic classroom. The cost of these is included in the discussion in Section 9.9.6.

9.9.5 Satellite systems

A working group which had been established to consider the report and recommendations of the National Communications Satellite Task Force (Guster 1979) stated that possibly the most immediate and visible educational use of a satellite system was in the extension and improvement of existing state educational services in isolated areas and catered for by tertiary education.

9.9.6 A Victorian plan and its possible generalisation

A Victorian State Working Party on telecommunications networking for tertiary education has just completed a proposal to link by telecommunications for tertiary educational purposes the Sunraysia College of TAFE with a number of Melbourne and Geelong tertiary institutions Wallace (1985). The approach adopted by the working party is able to be generalised as it contains elements applicable to other locations.

The proposal involves:

a) cross-sectoral initiatives involving TAFE, advanced education and universities;

b) various delivery strategies including on-campus, distance, outreach and mobile units;

c) inter-institutional resource sharing and collaboration, drawing upon the most appropriate course materials and personnel;

d) exploitation and application of the new technologies;

e) operations across state boundaries.

The working party proposes that, within the above principles, there should be established a telecommunications network which incorporates both satellite and terrestial distribution methods and which will enable the use of the educational resources of a range of city-based institutions to meet the needs of the tri-state area. This RECOMMENDATION is supported. In this way the recommended multi-campus tri-state TAFE institution will be an open learning college which has 'unspaced' and 'untimed' learning in making it available to people throughout the college area.

Wallace (1985) recommended that the proposal be implemented in two phases (Maps 7 and 8).

It is suggested that this recommendation not be accepted as phase 1 would separate the colleges of the area and the necessary interconnection for them to operate as a single unit (Section 9) would not exist. An alternative recommendation on phasing is made at the end of this section.

Smith (1985) suggested that the model which is appropriate for the proposed telecommunications networking consists of three levels:

a) The resource base - the institutions

These are the information providers of which there may be a number in the system. The higher level telecommunications and electronic equipment would be placed here. The resource base would be capable of providing courses through interactive television (Section 9.9.2).

Consistent with the proposals of the Victorian state working party on telecommunication networking, it is RECOMMENDED that the study centre at the Sunraysia College of TAFE become a resource base connected to the Victorian education telecommunications network at a cost of $92,000 (Wallace, 1985).

b) The study centre - resource and communications node

Besides fulfilling the traditional functions of a study centre, it will also provide the facilities of an electronic classroom. Smith, et al (1985) considered that it would be of value if the TAFE colleges which form the VTOCN were the nodes.

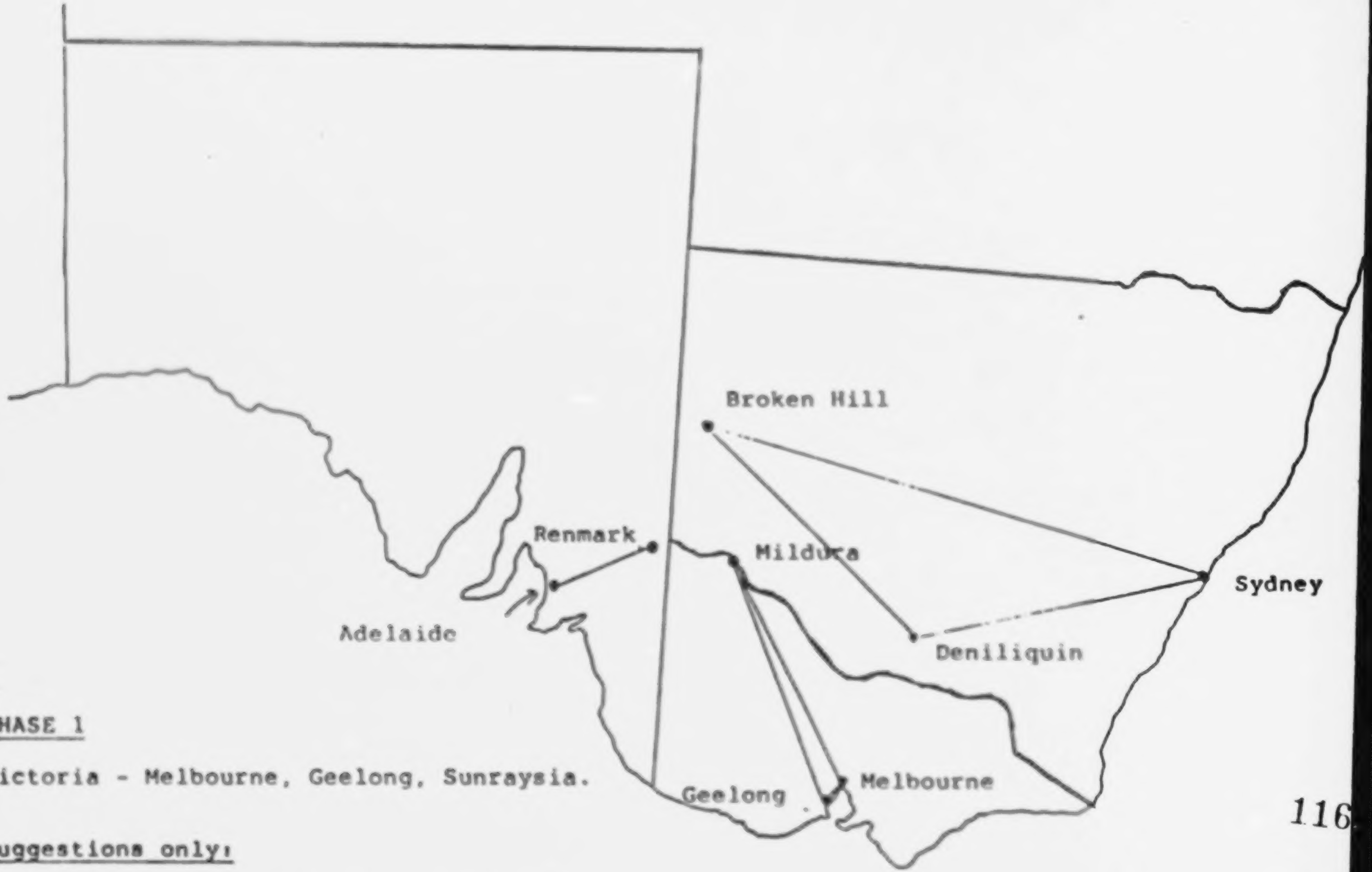
It is RECOMMENDED that the study centres at Riverland (Berri), Broken Hill (Robinson Centre) and Deniliquin become resource and communications nodes at an approximate cost of $60,000 ($20,000 per centre).

c) Individual user - sub-node

The sub-node may be either in smaller centres or even in student homes.

The sub-node may be, in effect, a sub-study centre in smaller towns which need community access or which have the need for some hardware for their students involved in university, college of advanced education or TAFE study.

MAP 7


Broken Hill
Renmark
Mildura
Sydney
Adelaide
Deniliquin
Geelong
Melbourne

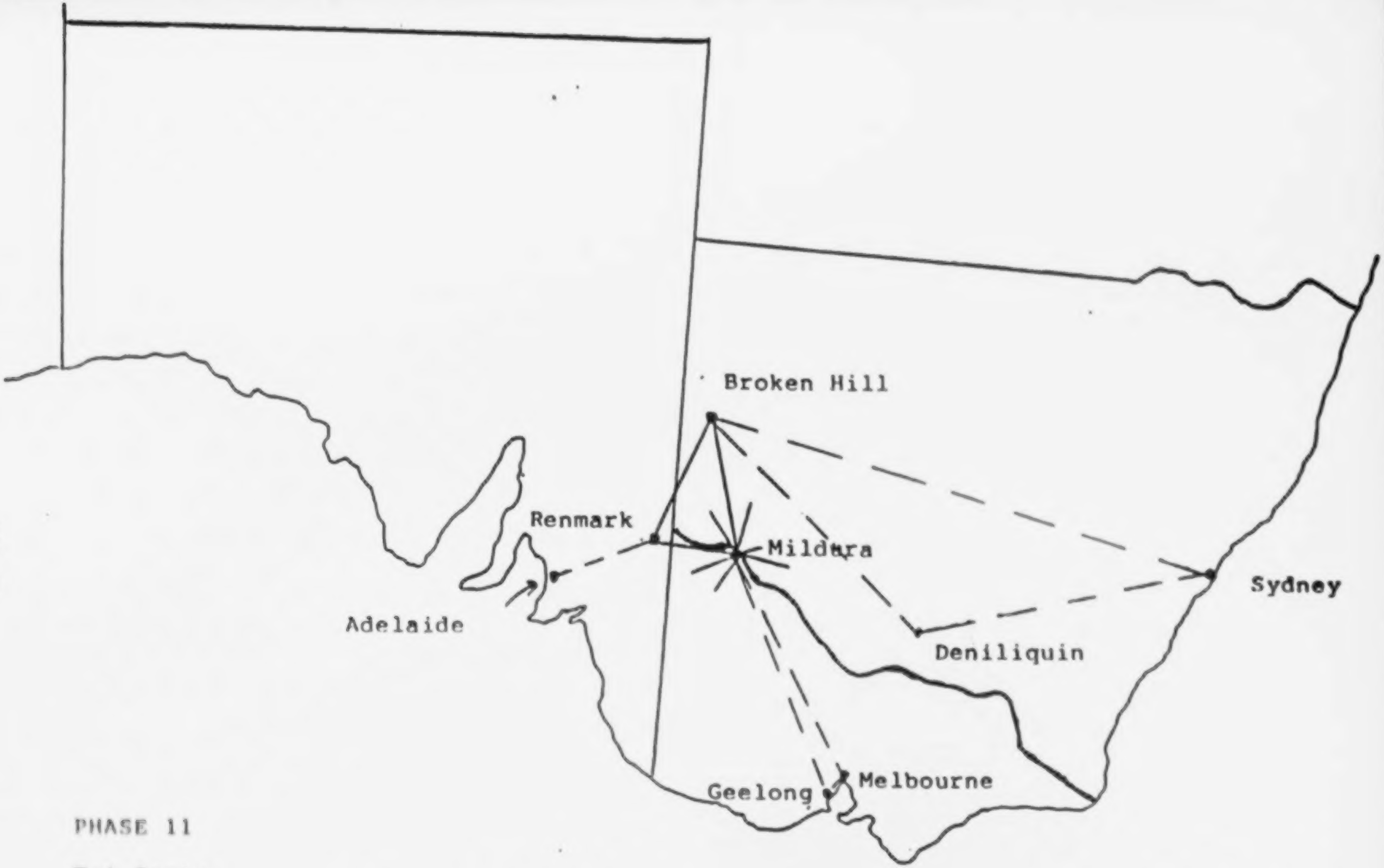
PHASE 1

Victoria - Melbourne, Geelong, Sunraysia.

Suggestions only:

N.S.W. - Sydney, Broken Hill, Deniliquin.
South Australia - Adelaide, Riverland (Renmark)

MAP 8


Broken Hill
Renmark
Mildura
Adelaide
Sydney
Deniliquin
Geelong
Melbourne

PHASE 11

Tri-State.

Mildura - Broken Hill - Renmark.

Sunraysia -

To all outreach centres (15) in total in Victoria and New South Wales.

New Links

Existing Links (Refer Figure 1)

There are a number of possible personal uses, for example, a student who takes the video tape from the local study centre and watches it on his own video player or a student with a personal computer connected to the network.

An outline of some of the possibilities for tele-education with the equipment required for each of the three levels of communications networking is set out in Appendix C.

The proposal for Victoria opens the way for several major developments to occur in the study centre network recommended to serve the study area. In effect the proposal:

- it enables development of study centres for all distance education students throughout the region;
- enables the accessing of a very wide range of learning resources by distance education students;
- it enables and encourages the cooperative development of learning resources between institutions and shared across the network by institutions and their students;
- it enables study centres to be large enough to warrant full-time staff providing services to students, to institutions and to the telecommunication network;
- it enables access to the resources by community groups.

If financial limitations require that the recommended telecommunications be implemented in phases, it is RECOMMENDED that the phasing be technical rather than geographic. For example rather than provide the resource base being recommended for Sunraysia in the first instance provide a resource and communications node and at the other centres, a sub-node, rather than a resource and communications node.

9.10 Higher education

9.10.1 The use of study centres

The use of study centres for the support of higher education in areas remote from higher education institutions is becoming well-established. In this region, MADEC conducts a study centre in Mildura for Deakin University and the Robinson Centre is conducted in Broken Hill by the Mitchell CAE.

The current MADEC facilities are not simply not adequate and, with the excellent base available at Sunraysia College, it would be uneconomic to develop them. It is RECOMMENDED that the higher education study centre conducted by MADEC in Mildura be moved to form part of the Sunraysia College. This is particularly desirable as the Sunraysia College is developing relations with Hawthorn, Ballarat and Capricornia.

For the purposes of delivery of higher education, it is RECOMMENDED that similar administrative arrangements should be developed for each study centre. They should be administered as part of the multi-campus tri-state TAFE institution along the guidelines set out in Section 9.4 with the details being worked out in consultation with the TAFE central administration, the appropriate higher education coordinating authority and the CTEC. The estimated cost is discussed in Section 9.4.

9.10.2 Contracting

Walsh (1985) said that one of the most appealing developments in education is the concept and application of contracting whereby one institution licenses another to teach on its behalf part or all of one of its award programmes.

Contracting arrangements between institutions from different sectors were proposed in some detail in the report of the Committee of Inquiry into Education and Training (Williams, 1979) These arrangements were seen as a means of meeting the demand for say higher education courses in locations where the existing institutions were say from TAFE and where there would be insufficient demand, in the long term, to allow for the construction of additional institutions.

The use of contracting was seen by the Williams Committee as a means of overcoming locational barriers to education especially if done in conjunction with the establishment of external studies programmes.

The committee recommended that:

> the use of contracting with respect to courses so that technical colleges could be given a contract to provide advanced education courses or study-centre facilities where there is an excess demand for advanced education courses which they would help to overcome satisfactorily (Williams, 1979, p.274).

The above recommendations have been implemented in Western Australia. The Western Australian Post-Secondary Education Commission (WAPSEC) has been instrumental in encouraging the establishment of contracting arrangements for advanced education courses in five of the six regional TAFE colleges (Sclanders, 1986).

The concept of the provision of higher education programmes under contract is not new to this area. Sunraysia College is currently negotiating to offer teacher training in conjunction with the Hawthorn Institute of Education and the first year of the Degree/Diploma of Fine Arts for the Ballarat College of Advanced Education (Sunraysia College of TAFE, 1985). It is negotiating also to contract business studies courses with Ballarat.

It is RECOMMENDED that the possibilities of extending the provision of higher education courses by contract through TAFE colleges be investigated.

One particular need relevant to the above recommendation was identified by Dixon (1986). He made the point that the opportunity to study food technology at higher education level was immensely important in the irrigated regions of the area. He advocated the availability of modules of the Bachelor of Applied Science in Food Technology from the Hawkesbury Agricultural College. It would seem that the best approach to this would be on a contract basis, provided adequate facilities for practical work are available at low cost. It is RECOMMENDED that this possibility also be investigated.

Gambetta (1986) warned of the dangers of academic drift. She emphasised that TAFE colleges should not see themselves as becoming institutions of higher education but should restrict themselves to acting as agents for such institutions by contracting courses.

Fraser (1986a) pointed out that many secondary school students who wish to train as teachers would prefer to study near home. However, the contracting arrangements being discussed between Sunraysia and Hawthorn would be limited to TAFE teacher training. It is RECOMMENDED that the contracting arrangements being discussed with higher education institutions by the Sunraysia College of TAFE be extended to include training in primary and secondary teaching.

9.10.3 Nursing

As pointed out in Section 7.2.3 (e), nurse training in Australia has been at two levels - registered nurse and enrolled nurse, and until very recently most training has been done in hospitals. However, there has been an increasing trend to train registered nurses in colleges of advanced education and the decision has now been taken for all such training to be done in these institutions.

The decision to place all of the training of registered nurses in colleges of advanced education has created considerable resentment in the study area as people who wish to train need to travel to Bathurst (Mitchell CAE), Ballarat (Ballarat CAE), Adelaide (SACAE) or Wagga (Riverina - Murray CAE).

In NSW, Barnard reported that Mitchell CAE had been given responsibility for nurse training for the whole region west of the Great Divide with the exception of the Riverina. It would therefore seem reasonable for Ballarat CAE to accept a similar responsibility for the Sunraysia region of Victoria.

In these circumstances there seems to be a clear case for contracting. In other words the provision of the course for registered nurses through the Broken Hill and Sunraysia TAFE Colleges and training hospitals under the supervision of the Mitchell CAE and Ballarat CAE respectively. Barnard commented that as far as training hospitals in New South Wales are concerned this would mean upgrading facilities. For Broken Hill at least this comment is disputed by hospital authorities.

It is RECOMMENDED that courses for registered nurses should be contracted through the Broken Hill and Sunraysia colleges and training hospitals under the supervision of Mitchell and Ballarat CAEs respectively.

9.11 The costs

In a study where such wide-ranging recommendations are made, some indication of the costs involved is necessary. In many cases, particularly where students are being redirected, there will be no additional cost as it will be a case of using money in a different way.

The estimated additional cost of the implementation of the various recommendations is shown in Table 6.

Table 6

Estimated additional cost of implementing recommendations

Recommendation	Capital	Recurrent per annum	Text reference
	$	$	
1.2	-	150 000	Section 9
3.2	-	40 000	Section 9.1.1
3.16	-	40 000	Section 9.1.3(c)
3.17	-	30 000	Section 9.1.3(d)
3.18	-	30 000	Section 9.1.3(e)
4.1	75 000	80 000	Section 9.2(a)
4.3	30 000	40 000	Section 9.2(c)
4.5	200 000	-	Section 9.2(e)
5.1	-	90 000	Section 9.3
6.2	-	800 000	Section 9.4
6.3	92 000	-	Section 9.9.6(a)
6.4	60 000	-	Section 9.9.6(b)
9.4	200 000	320 000	Section 9.7
10.2	-	50 000	Section 9.8.2
Totals	$657 000	$1 670 000	

10. DELIVERY OF TAFE SERVICES TO ISOLATED AREAS - A BROADER PERSPECTIVE

10.1 Introduction

This project has been based on the premise that there are and will always be people in Australia people who wish to benefit from TAFE courses, but who live in small communities which are unable to support permanent TAFE facilities and which are too far from such facilities for the potential students to use them.

The project detail has concentrated on a three-state area served by the TAFE colleges at Broken Hill, Deniliquin, Mildura and Renmark because it was considered that the problems of access and their solutions in that area are similar to other remote areas of Australia. In other words general principles identified in this study have nation-wide application.

10.2 Use of existing non-education facilities

From time to time there will be demands in isolated areas (even when TAFE colleges exist) for programmes (often one off) for which it would be uneconomical to provide college facilities. One method of approaching this problem is to use existing non-education facilities (for example, factories, offices or farms).

Kirby (1985) recommends (Recommendation 46) that TAFE should cooperate with industry and commerce when making arrangements for the training of TAFE students. This procedure is RECOMMENDED in so far as it applies to students in remote areas.

10.3 Mobile units

The principle of mobile road and rail units for providing TAFE programmes is well-established and the means by which road units might serve the tri-state area have been discussed in Section 9.7. Such units with a variety of purposes and designs are operating already in remote areas of Australia as well as in other parts of the world. But Australia is so vast that ground level services can never meet all its needs. This has led people to look at using aircraft.

The Australian Flying Arts School (AFAS) is a unique organisation offering a practical response to the Australian problem of isolation, by providing a diverse arts programme to isolated people.

Flying Arts School tours are conducted by light aircraft four times a year to remote centres in Queensland and northern New South Wales. To complement the programme, a variety of correspondence courses is offered.

Classes are held in any suitable building (and some not so suitable) and a minimum of seven students is required. Each centre is expected to nominate a centre representative to act on behalf of the group and to liaise with the AFAS office (AFAS, nd).

10.4 Distance education

In each state of Australia there is a distance education institution the purpose of which is to provide for people who, for one reason or another (of which isolation is one), find attending face-to-face classes inconvenient. It was noted in Section 6.6.1(c) that the New South Wales distance education college does not allow enrolments from outside that state if the state where the applicant resides has the same or similar course available through distance education.

In addition, South Australia limits interstate enrolments to 5% of the total quota (Heads of TAFE External Studies Conference, 1986).

There are at least two problems here.

Firstly, one is left to wonder at the efficiency of duplicating identical distance education courses across the states. The Chairman of the Standing Committee on External Studies of the CTEC (Professor R. Johnson) quotes from the current CTEC Review of Efficiency and Effectiveness in Higher Education on this issue. He suggests that the outcome of the review is likely to include recommendations on rationalisation by collaborative course development and delivery across institutions offering external studies (CTEC, 1986). In its submission to the same review, the Commonwealth Department of Finance claimed that economies of scale can lead to savings in the provision of reference materials and equipment (Department of Finance, 1985).

The national heads of TAFE external studies institutions are aware of these problems and have developed a paper to explore the possibilities and practicalities of increasing the range and extent of resource sharing and cooperative activities between the states with a view to achieving a greater degree of cost-effectiveness in the operations of TAFE distance education (National Heads of TAFE External Studies, nd).

Further the Standing Committee on External Studies of the CTEC has accepted a proposal to develop a working model for the development and delivery of national TAFE external studies offerings. The working model will concentrate on the means by which the most educationally effective and cost-effective sharing of resources can take place (CTEC, 1985b).

This concern for resource sharing did not extend to advocating uniform courses although with national core courses being developed through the Curriculum Projects Steering Group (CPSG), the fact is that TAFE courses in many disciplines would be similar enough for an identical distance education course across the nation.

Therefore it is RECOMMENDED that where a TAFE course is similar enough for an identical distance education course to be offered across the nation, that course should be developed through only one TAFE distance education institution.

The second problem is the arbitrary restriction on enrolment which will continue while the first problem remains unresolved. Students should be free to seek TAFE distance education programmes from the institution of their choice.

It is RECOMMENDED that TAFE students be free to enrol in the TAFE distance education institution of their choice.

10.4.1 Audio-based

Ausburn and Ausburn (1986) in their study on the delivery of distance education in Australia have recommended that emphasis for further development of audio-based distance education material be on non-broadcast media. These have the advantage of being available for use at whatever time and at whatever speed suit the student. This RECOMMENDATION is supported.

10.4.2 Selection of appropriate media

Ausburn and Ausburn (1986) reported that TAFE distance education has identified several courses which cannot be taught appropriately by the conventional print-based method. Courses of this type are seen as being ripe for teaching by using other media.

In Section 9.8 the recommendation of Fallon (1986) was discussed. This recommendation is supported and it is therefore RECOMMENDED that distance education courses should use a variety of media. The criteria for the selection of media should include their relevance to the student client group and the language and literacy formats which meet the cultural, social and economic backgrounds of the group.

10.5 Recent developments in the use of telematics

Ausburn and Ausburn (1986) quoted Wedermeyer (1977) who suggested that, if distance education is to meet currently emerging needs, it must be capable of meeting the following criteria:

- operating in any place where there is at least one student, whether or not there are teachers in the same place;
- placing responsibility for learning upon the student;
- offering students more choices and opportunities in courses, formats and methodologies;
- using all effective media and methods, so that each subject is taught in the best way;
- preserving and enhancing opportunities for adaptation to individual differences;
- permitting students to start, stop and learn at their own pace.

According to Ausburn and Ausburn, in order to meet these criteria a variety of technologies of instruction must be used.

Foks (1983) noted that these new technologies have become more available and more easily applied as a consequence of some special trends. These trends are:

- decreasing costs per unit of hardware;

  (More telematic equipment is available to institutions and students. Sophisticated pocket calculators and audio cassette recorders are assumed to be standard equipment for students, while, as pointed out in Section 9.8.5, video players are within the grasp of more and more members of the community.)

- increasing versatility per unit of hardware;

  (Reference is made in Section 9.9.3 to videodisc storage. Foks said that the increased ability of telematics hardware to provide interaction with a student has made it possible to consider using technology to perform functions which were previously the domain of the teacher.)

- increased user friendliness.

  (In effect the term 'increased user friendliness' means that students can concentrate on primary learning activities without obstacles of for example having to learn to be computer operators with high level typing skills.)

The Commonwealth Government has asked the Commonwealth Tertiary Education Commission to report on means of increasing enrolments and participation in tertiary education including the wider use of new technologies (Ryan, 1985).

The CTEC will have available to it the work of the National Working Party on Telecommunications for Tertiary Education which found that there are 120 tertiary institutions which would be interested in being included in a national telecommunications network (Carroll, 1985).

Fallon (1986) has recommended that each state and territory establish a task force which should (inter alia) be provided with resources to investigate and fund pilot developments of new delivery modes. These modes should be based on a decentralised, off-campus approach using new communications technologies such as electronic classrooms and AUSSAT as well as stand alone audio, visual and electronic learning resources. She further recommended that the developments in each state and territory should be co-ordinated and monitored nationally, say through the TAFE National Centre for Research and Development.

Such an operation would be consistent with the aims of the Centre which include:

- the planning and development of learning materials relevant for the needs of TAFE;
- the evaluation, development and promotion of technological aids in education;

- liaison with authorities responsible for education and training within Australia and elsewhere for the purpose of collecting, assessing and disseminating material relating to TAFE curricula and educational materials (TAFE National Centre for Research and Development, 1985).

It is not envisaged that the Centre would exercise a controlling role over the activities of the states, but that it would monitor activities and disseminate information.

Therefore it is RECOMMENDED that

- Each state and territory establish a task force which is provided with resources to investigate and fund pilot developments of new delivery modes based on a decentralised, off-campus approach using new communications such as electronic classrooms and AUSSAT as well as stand alone audio, video and electronic learning resources.

- Developments in the new delivery modes for distance and off-campus education should be monitored and the information disseminated nationally by the TAFE National Centre for Research and Development.

Ausburn and Ausburn (1986) would go beyond the suggestion of Fallon (1986) that the states should operate independently and that their operations be monitored and disseminated. In their view a national TAFE distance education consortium should be looked into very seriously. The aim of the consortium would be to pool expertise and finance, investigate potential in concepts such as satellite usage and computer networking, offer major production facilities and promote standardisation of techniques such as design guidelines, production guidelines, validation techniques and hardware specifications.

To make, or even support, such a recommendation is outside the scope of this report, but it is clear that the continuation of obvious inefficient processes should be stopped. It is suggested that this is best done cooperatively between the states and therefore it is RECOMMENDED that new developments in the use of telematics in distance education should be cohesive and complementary between the states. This may be achieved through the Conference of Heads of External Studies.

10.5.1 Knowledge network of the West (KNOW) - British Columbia (Canada)

There are overseas models of the use of new telematics in education from which Australia can learn. Foks (1982) in his study tour report commented on the Knowledge Network of the West (KNOW) which operates in British Columbia. He described KNOW, which was established in 1980, as an organisation which coordinates the development and delivery of electronically-based learning experiences.

Originally KNOW was concerned mainly with television programmes transmitted by a combination of satellite and cable systems (in remote areas, satellite only) but it is now also looking at audio-conferencing and computer networking. The institutions involved included 15 community colleges, seven regional centres, three universities, various schools and government departments.

Through its high technology carrier network 98 hours of educational television are transmitted each week.

10.5.2 The telephone

Ausburn and Ausburn (1986) reported that the use of the telephone has been very successful in tutoring in distance education. Telephone technology is relatively low cost and uses hardware and facilities already available to most providers and users of distance education.

Ausburn and Ausburn suggested that TAFE providers are not making as much use of the telephone as they could. They RECOMMEND, and this report supports that, investigation be made of the potential for expanded use of the telephone for students in remote areas for:

- individual tutoring (i.e. one-to-one exchange between student and tutor);
- teleconferencing via loudspeaker telephone in regional or neighbourhood centres;
- teleconferencing via conference hookup for group tutoring of learners who are geographically dispersed.

Ausburn and Ausburn also quoted research which showed that specialised skills and preparation are required in order to make effective use of the telephone in distance education. They RECOMMEND, and this report supports,that a staff development programme be conducted to prepare staff to use the telephone effectively in distance education.

While the telephone has obvious advantages, as Simpson (1985) pointed out, it is not the final answer to provision of educational programmes to students in remote areas. He pointed out that the telephone is impractical in circumstances such as

- where telephone lines are unavailable; (this is so in a number of isolated areas of Australia.)
- where the telephone is a party line;
- where there is a higher priority than education for the use of the telephone.

As is pointed out below, the use of satellite systems provide an answer to some of these circumstances.

10.5.3 Video conferencing

As pointed out in Section 9.9.2 full 'confravision' is far too expensive for educational purposes but, less costly, and nearly as effective, compromises are available.

It is RECOMMENDED that use be made in distance education of interactive television broadcasting using teleconferencing for the audio interaction.

10.5.4 Satellite systems

The discussion on the new technologies has so far been limited mainly to ground based telecommunications. The problem with such communications are that they are largely point to point with cost being a direct function of the number of points to be linked and the distance between them. Further, these communications use the public telephone network which should not be tied up for long periods (Simpson, 1985). These problems are strongly emphasised by the Isolated Children's Parents' Association (Gray, 1986).

Additionally, where over the air point to multi point systems are in use, they currently depend on HF (high frequency) radio which, as has been pointed out in Section 6.6.2 is of variable quality.

Porter (1984) noted that the use of satellite systems for educational purposes, though recent, is not new. Because of its ability to improve the capacity, reliability and quality of communications, a satellite system is an ideal means of bringing education to persons in remote and isolated areas where large distances and unfriendly terrain inhibit communications by terrestial means. In fact, everyone within the footprint area of a satellite may receive its services. For example, an educational television programme can be received simultaneously at any number of educational institutions or by individual students anywhere in Australia.

In addition, satellite systems overcome two of the deficiencies listed by Gough, et al (1981). These were the lack of interaction with teachers and peers and slowness of response.

In addition, Gough, et al (1981) saw a number of advantages in the use of satellites for distance education. These included:

- the opportunity to use a greater variety of instructional materials;
- greater access to self-paced learning programmes;
- more rapid and accurate diagnoses of learning difficulties;
- readier access to remedial or bridging programmes;
- enhanced student-teacher interaction;
- enhanced interaction among students.

In July 1983, the Australian Government decided to go ahead with a National Communications Satellite System (NCSS) developed by AUSSAT. In order to use the system, it is necessary to have appropriate ground equipment (earth stations).

There are two types of earth station relevant to distance education:

i) Major city earth stations

There are no restrictions on the location of earth stations in Australia and they will be established in each of the capital cities and several other large cities (including Mildura).

This will enable television studies in major cities to be linked or, more importantly for this study, the satellite system could be used to relay programmes from a metropolitan studio to one or more transmitters in rural areas.

ii) Homestead and community broadcasting satellite service (HACBSS)

This service will enable homesteads and relatively small, remote communities to receive programmes through the use of small receive-only earth stations.

Gough, et al (1981) suggested that what the educational user needs access to is:

- one or more TV channels on a satellite;
- a much larger number of audio channels;
- an uplink transmitter to relay programme material to the satellite;
- a multiplicity of small earth stations for use by individuals or groups.

In addition, access to teleconferencing facilities to enable interactive voice communication is required.

a) Current proposals for the use of satellites in education in Australia

i) AUSSAT has offered to Deakin University either

- seven ground stations for eighteen months;
- free transponder access for eighteen months;
- a compromise arrangement between the last two.

The 1985 telecommunications conference at Deakin University voted to accept the second. The Victorian State Working Party on Communications Networking for Tertiary Education is working towards trials on this (van Heumen, 1985).

ii) South Australia is acting independently and is considering up to 25 ground stations with demand-assigned multiple access.

iii) Fallon (1986) reported that the Department of Employment and Industrial Affairs, in conjunction with the Commonwealth Department of Education and the Northern Territory Department of Education is funding a consultant to investigate the feasibility of the use of tele-communications, particularly the domestic satellites, for the delivery of training.

iv) **Queensland is establishing at Mt Isa School of the Air for its first distance education satellite programme.**

Simpson (1985) claimed that with the implementation of a service based on satellite technology, the vast majority of School of the Air students could be provided with a programme mixing correspondence papers, audio-tapes and other resources such as interactive audio with a much improved quality and reliability than that provided currently by HF radio.

In order to establish the most effective means of using this new technology in the Australian context, the School of the Air at Mt Isa commenced a trial in January 1986. The trial involved the transfer of eight, level 6 homestead students to a satellite based School of the Air communications link. The satellite provided two-way voice, two way data and one way video as the basis for testing a variety of teaching models generated by specialists in the Queensland Department of Education. The trial is being staged as a co-operative effort between the Queensland Department of Education and AUSSAT.

In general, the technicalities of the system have no place in this paper. However it should be noted that each homestead student has been allocated a separate channel frequency through the satellite. This allows simultaneous student transmission with each other and the School of the Air. It also allows segregation of individual students or groups of students for tutorial purposes.

b) Implications for education systems of satellite technology

i) Cost

The potential to use a satellite system for educational service depends upon the cost of providing these services as compared with other means of provision.

The most costly aspect of using the satellite for educational broadcasting will be the development of appropriate programmes. The cost of hiring capacity and time on the satellite could be minimal.

There will be an occasional use cost of $1000 an hour for television while voice only will cost less. Discounts will be given for out-of-prime time (prime time is 4.00 pm to midnight) and a further 20% discount will be given for recognised educational and research organisations.

There would also be the cost of installing appropriate antennae in rural and remote areas. It is likely, however, that homesteads and small communities will provide their own.

ii) Need for guaranteed access

If satellite capacity is reserved for educational use, there remains the problem of guaranteeing continuing access to the system as heavy investment in developing the capacity to use the technology would have been made. The educational user is usually at the end of the queue and has access only because the satellite has surplus capacity. There is a danger that, as the paying customer graduates requires more time, the educational user will be squeezed out. It is necessary for a maximum proportion of the capacity of the satellite system to be reserved for educational use.

iii) Potential for improvement of service delivery

- Educational services for children in remote areas are provided currently through the School of the Air system where the quality of transmission to many locations is poor. A satellite system would give much better quality two-way audio capability for student-lecturer interaction.

- The delivery of educational services cannot be seen in isolation from the traditional methods of distance education. A satellite system would give the facility for broadcasting video or audio programmes in conjunction with distance education.

- The use of facsimile equipment would provide for the rapid transfer of papers associated with lectures. This would overcome the common criticism in distance education of the time-lag between completion of assignments and their return.

iv) Institutional co-operation

Gough, et al (1981) maintained that satellite technology can only be used effectively through collaboration and co-operation between tertiary institutions.

There are two principal areas of co-operation:

- Academics from different institutions may pool their specialities to develop and write new courses. Institutional designers, editors and graphic designers can similarly be used on a co-operative basis. In this way courses can develop which draw on the best expertise available.
- A common delivery and support service can be provided by a group of institutions - in this case the four colleges serving the region.

10.6 Higher education

Throughout the remote areas of Australia there are relatively small, but still important groups of people who desire higher education programmes. TAFE should have an important role to play in the provision of these services.

Parkinson et al (1986) reported that Schulstad (1985) and Clark (1985) have summed up the problems of isolation for many of these people who live in small towns and isolated communities. They must leave their family environment and seek accommodation in another place at a crucial stage of their education. The reluctance of people in Broken Hill to do this is pointed out in Section 9.5.

10.6.1 The study centre

It has been recommended earlier (Section 9.4) that TAFE colleges in the study area should develop services and facilities along the lines of the Northern Territory External Studies Centre (Advanced Education).

Hudson (1985) made the point that study centres should be established in a number of regional centres throughout Australia, where there is (or there is expected to be) an established TAFE college but where there is insufficient demand to justify an institute of tertiary education (see 10.6.3 below). In effect, Hudson recommended a nationwide network of study centres using TAFE colleges as the base. An example further to those discussed above is at Orana Community College in Dubbo, NSW, where an individual learning centre which is available to students irrespective of the institution in which they are studying (Schulstad, 1985).

This recommendation that TAFE colleges provide the base for a nationwide network of study centres has been picked up by the CTEC (1986b) in its review of TAFE funding. In discussions of this concept, it was not intended that space should be designated for the exclusive use of external or on-campus higher education students. What was intended was that the capacity for TAFE colleges to provide services such as library and computing should be built up for the use of both TAFE and higher education students.

The CTEC has RECOMMENDED (and this recommendation is supported) that:

- A new category of recurrent grant should be provided to assist with the costs of providing study facilities in TAFE colleges for external higher education students.
- The funds should be applied to establish basic book-stocks and as a contribution to overheads, including staff costs.

In the view of the CTEC an initial grant of $1-2 million would be required.

Northcott and Shapcott (1986) were pessimistic about the prospects of success of the above proposal. They maintained that two features were necessary for success. They are:

- a designated area which acts as a reception area and which presents an attractive and welcoming aspect.
- the availability of staff who are committed especially to their off-campus clientele.

Although Northcott and Shapcott claim that these two conditions are irreconcilable with the CTEC proposals, this claim is difficult to accept. A reception area with the sign 'No TAFE students welcome' although specifically designated would hardly be welcomed. Further it is pure assumption that a study centre would not be committed to off-campus clientele. In fact, the staff structure recommended in Section 9.4 (outlined in Appendix F) would be consistent with the CTEC recommendations.

10.6.2 Recognition of TAFE qualifications by higher education institutions

In many parts of Australia the only form of tertiary education available to people is TAFE. However, some of these people may wish to transfer to higher education and are very interested in the amount of credit their TAFE courses are given by higher education institutions. Parkinson et al (1986) have reported that a survey of TAFE colleges has shown a general lack of satisfaction at both the lack of status granted and the lack of consistency in granting status to TAFE qualified students by higher education institutions. This, it was claimed, has led to students having to repeat work done already in their TAFE courses with a consequent unwillingness to attempt to transfer.

Parkinson et al (1986) made a number of recommendations to meet this problem, but the most relevant and that RECOMMENDED here is that the CTEC, through the TAFE Council and in consultation with state TAFE authorities, conduct discussions with the Universities Council and the Colleges of Advanced Education Council with a view to developing national guidelines for the acceptance for admission and status in higher education courses of suitable and relevant TAFE courses.

10.6.3 Institutes of tertiary education

Hudson (1985) asked why it had not been realised that the development of higher education courses in TAFE colleges in rural or regional centres can be a means of increasing access to higher education for country and isolated students.

Hudson suggested that a form of 'Institute of tertiary education' would be very relevant in a number of regional centres throughout Australia where there is (or there is expected to be) an established TAFE college but where there is an inadequate catchment for a separate higher education facility. The legitimate interests of local students to participate in higher education courses can be fostered through a higher education component established within the TAFE college.

In it supplementary report for 1986 and 1987, the CTEC (1985) proposed that, as much as possible, further increases in intakes in higher education should be allocated to outer metropolitan and regional institutions and that these institutions should receive special support to enable them to carry out programmes effectively.

Developments of this nature in isolated areas including the tri-state area where there are TAFE colleges hold out great hopes for potential students. It is RECOMMENDED that TAFE colleges form the basis for 'institutes of tertiary education' where the demand for higher education warrants it. It is further RECOMMENDED that the Tri-State TAFE Consultative Committee approach the three state TAFE authorities with a request that the CTEC investigate the possibility of funding an institute of tertiary education in the Tri-State area as a pilot for rural areas in Australia. This would be particularly appropriate if the recommendation for a single multi-campus TAFE institution is accepted.

APPENDIX A: COURSE PROVISION AND ENROLMENTS IN THE AREA

A.1 On-campus course provision at headquarters campuses

A.1.1 Sunraysia College of TAFE

The college provides on-campus courses at its Mildura headquarters in a number of disciplines. (Lyons, 1985).

a) Agriculture and Horticulture

The Agriculture Department offers a comprehensive programme of courses designed to cater for the needs of horticulturists, graziers and cereal growers. Courses include apprenticeship training for the farming and horticultural (gardening or nursery) trades, a Certificate in Woolclassing, a Certificate in Agriculture and Horticulture and a number of short courses, including owner-classer stencil.

b) Applied science

This department offers a number of subjects in mathematics and science. The subjects are moderated by the Ballarat College of Advanced Education.

c) Art and design

It is proposed to offer a Certificate of Applied Art - Finished Art. The course will lead to employment as printers, finished artists, photographic assistants or display artists. It is also proposed to offer the first year of the Diploma of Art from Ballarat CAE under contract.

d) Automotive and farm mechanics

The Automotive and Farm Mechanics department offers the motor mechanics apprentice course together with a variety of modules and other courses in automotive and farm mechanics.

A course which is provided by the Automotive and Farm Mechanics department and which was identified by Jenkins (1986) as fulfilling an important need is the forklift driver's course. Successful completion of this course leads to a certificate of competency issued by the Victorian Department of Labour and Industry.

The Department provides training for certification as a plant operator (front end loader/back hoe operator).

The Panel Beating Department conducts training courses for vehicle construction and repair apprentices as well as a number of short courses.

e) Building studies

The Building Studies area has two departments - carpentry and joinery and plumbing and gasfitting. Both conduct training for trade apprentices and short courses.

f) Business and secretarial studies

The Business Studies Department is responsible for the conduct of vocational courses which are aimed at providing students with the skills demanded by commercial enterprises. It teaches the following courses:

- Certificate of Business Studies;
- Office and Secretarial Studies Certificate;
- Computer User Certificate.

In addition, there are a number of short courses.

The Computer Services Department is responsible for the provision of computing facilities to any department as required. It also offers computer programming subjects.

g) Child Care

The college has a modern creche, featuring a nursery, playgroup area, kitchen, toilets and enclosed court yard.

h) Clothing and textiles

Courses conducted by the Clothing and Textiles Department are the Private Order Dressmaking Certificate and a number of special interest short courses.

i) Electrical and electronics

Courses conducted in the Electronics department include the trade apprentice electrical course, the post-trade industrial electronics course and the basic electronics certificate course.

j) Engineering trades

The Fitting and Machining department provides the trade apprenticeship course in fitting and turning and courses in hydraulics.

The Metal Fabrication Department conducts training for metal fabrication apprentices and other courses in welding.

k) Food and food service

The Food and Food Service Department provides an apprenticeship course in cooking, a Certificate of Catering and a variety of courses for the hospitality and tourism industry.

l) General studies

The general studies courses of the Humanities Department provide subjects for the development of individual personalities and skills, e.g. English, Italian. The actual courses provided are listed in Table A1.

m) Secondary school programmes

The Sunraysia College offers a Tertiary Orientation Programs (T.O.P.) in applied science, art and design, business studies and general studies. These provide a special preparation of study for tertiary subjects. As a consequence of the Blackburn (1985) Report, a Victorian Certificate of Education is to be introduced in 1987 with existing T.O.P. courses as one of the options. These will remain substantially unchanged until 1990. In 1990 a new certificate which will allow some TAFE studies to be counted will be introduced (Emmett, 1986).

n) Transition Education

The Sunraysia College of TAFE conducts an Education Programme for Unemployed Youth, a pre-vocational course in hospitality and special participation and equity programmes for Aboriginals.

A.1.2 Riverland College of TAFE

The Riverland College of TAFE is a multi-campus college. For this study, Berri campus is considered as the headquarters.

Table A1

Sunraysia College of TAFE, General Studies Department
Courses offered 1986

Day

T.O.P. General Studies (Full & Part-time)
Return to Learning (Full & Part-time)
Hospital Management (124 hours)

Evening

T.O.P. English
T.O.P. Psychology
T.O.P. Sociology
Australian Politics
Beginner's Italian
Advanced Italian
Leaving Italian
Occupational Preparatory Course
Cert. of Applied Social Science - Welfare Studies
Better Business English

Outreach

Public Speaking/Meeting procedure
Effectiveness Training

Service to other Departments

Certificate of Agriculture
Certificate of Catering
Certificate of Business Studies
Private Order Dressmaking Certificate
Cooking Apprentices
Computer Users Certificate
Hawthorn Teacher Training

Business and secretarial studies

The principal courses available are the Business Certificate (Accounting) and the Commercial Certificate. Some elective subjects for other business certificate courses are available also.

It is planned to relocate most of the business studies in the college at the new Berri headquarters (Seidel, 1985). The advantage of this move is that Berri is the main centre of white-collar employment in the area and central to the majority of the population. The shift will provide increased access.

An Aboriginal education programme is conducted at Berri with classes at Glossop and Gerard. In addition, an adult literacy programme, English classes for migrants and a number of general education programmes are offered.

A.1.3 Broken Hill College of TAFE

The Broken Hill College of TAFE maintains a solid core of vocational courses to meet the local, industrial and commercial needs of Broken Hill and the Far-Western Region. In addition it offers leisure and special education programmes such as P.E.P., Aboriginal education and Joint TAFE/School programmes (Broken Hill College of TAFE, nd).

a) Art and design

Non-vocational courses are provided in drawing, painting and ceramics.

b) Automotive and plant mechanics

The college conducts the full trade course in automotive mechanics (light-vehicles) and Stage I of the trade course in plant mechanics. It also conducts a post-trade course in automotive engineering, diesel.

c) Building studies

The School of Building provides trade courses in carpentry and joinery and painting, decorating and signwriting. There is also a post-trade course for building foremen and clerks of works and special courses in explosives and rigging.

The School of Plumbing and Sheetmetal provides a trade course in plumbing and a number of post trade and special courses.

d) Business and secretarial studies

In New South Wales TAFE these are considered as two separate study disciplines. The School of Business and Administrative Studies provides certificate courses in accounting and management on a part-time basis.

A series of computer studies programmes is provided. There is also a full-time, one year Certificate in Secretarial Studies and a full-time, one-year special course in office studies as well as a number of shorter part-time secretarial courses.

e) Clothing and textiles

In New South Wales this is called the School of Fashion. A Certificate Course in Fashion Retail is offered. The course consists of a core and electives which are assembly techniques, basic headwear, childrens wear, creative clothing, developing creative crafts, fabric printing, furnishing decor, mens casual wear, pattern making, stretchwear and tailoring. Some special courses are offered also.

f) Electrical and electronics

The college programme is limited to electrical studies. An Electrical Engineering Certificate and an Electrical Trade Certificate are offered as well as special courses for electrical motor operation, electric winder drivers and electrical wiring.

g) Engineering trades

The college conducts an extensive programme in the engineering trades. Courses include:

- Mechanical Engineering Certificate;
- trade certificates in fitting and machining and metal fabrication;
- post trade courses in boilermaking, industrial hydraulics, special welding techniques;
- a number of special courses.

h) General studies

Special courses in Croatian, Greek and Italian are offered. Literacy and numeracy teachers are available to assist adults to reach the literacy levels they need for life and work.

i) Food and food service

There is no course in commercial cooking available. However, certificate courses in home economics including liquor and dining room service and home and food services are offered. A number of special courses are available also.

The introduction of the Home Economics Certificate in 1983 provided a new avenue for vocational education, particularly for young women whose opportunities in the past have been more restricted than in any other region of New South Wales (NSW DTAFE, 1986).

j) Secondary school programmes - Joint TAFE/School programmes

A wide range of courses for year 11 and 12 students is available through electives studied in the TAFE college. These include welding, computing, accounting, business management and engineering. Credit for completing these studies successfully is available both from the Board of Senior School Studies and the Department of TAFE (Department of TAFE, 1986).

k) Transition education

Broken Hill College of TAFE offers pre-apprentice (one year, full-time) courses in fitting and machining/automotive engineering and metal fabrication. Applicants must be at least 15 years of age and must sit for an aptitude test.

A.1.4 Deniliquin College of TAFE

The Deniliquin College of TAFE offers over 60 courses in TAFE for Deniliquin and its surrounding rural communities. It is the centre for apprenticeship training in the south-west Riverina and it also provides sheep, wool and other rural studies to an area which contains world class merino studs (NSW DTAFE, 1986).

a) Agriculture and horticulture

The trade certificate in dairy farming units from the Farm Technology Certificate Course and a special course in woolclassing are offered.

b) Automotive mechanics

Trade courses are conducted on a day-release basis. All three stages of the course are covered, with post-trade courses being conducted subject to demand. Since 1984 a pre-apprentice course has been held. (Deniliquin College of TAFE, nd).

Deniliquin serves Hay (Buckley, 1986).

c) Building studies

No apprentice courses are conducted but there is a pre-vocational course.

d) Business and secretarial studies

Courses in real estate, supervision, computer studies and accountancy are offered. There are both full-time and part-time courses in secretarial studies.

e) Clothing and textiles

This is the largest section within the college in terms of enrolments. Subjects from the Retail Fashion Certificate are taught.

f) Engineering trades

Classes in all three stages of the Welding Trades Certificate plus post-trade courses are conducted. In addition a number of non-trade vocational welding courses are held.

g) Food and food service

Cooking and cake decorating units from the Home Catering and Management Certificate course are offered.

h) General studies

An extensive adult literacy programme is conducted using both the tutor system on a one-to-one basis and the normal classroom mode. Special language classes are offered to students whose native language is not English. (Deniliquin College of TAFE, nd).

A.1.5 MADEC

Besides a comprehensive enrichment programme, MADEC conducts some vocational courses particularly in health services, literacy and English for migrants.

MADEC has received substantial funding (about $20,000 per annum over the last three years) for its adult literacy/advanced English language programmes for non-English speaking groups in the Sunraysia area (Budge, 1986). It provides courses in adult literacy, migrant English and migrant literacy. There is a self-paced multi-cultural learning centre (MADEC, 1985).

The Sunraysia College of TAFE (1985) advocates that it should provide on a contract basis the vocational courses offered by MADEC. It claims that this would overcome any possible confusion in the minds of the public and would reduce the effect of fragmentation of TAFE resources and maximise access to educational opportunity.

A.1.5 On-campus enrolments at college headquarters

The enrolments (1983) for all campuses of the colleges in the region with permanent facilities by campus and programme are shown in Table A2.

The headquarters campus of the Sunraysia College of TAFE at Mildura has a spread of enrolments over a range of vocational programmes with business studies, agriculture and horticulture and building programmes having the largest.

TABLE A2

Enrolments in TAFE colleges (Streams 1-5) in the region by discipline for campuses with permanent facilities by year available

	1983 SUNRAYSIA	1983 RIVERLAND					1983 BROKEN HILL	1985 DENILIQUIN	1985 MADEC	TOTAL
	MILDURA	BERRI	RENMARK	LOXTON	WAIKERIE	CADELL				
VOCATIONAL										
Agriculture & horticulture*	321	3	3	24	9	2	-	58	81	501
Art and design	27	1	-	1	-	3	268	-	136	436
Automotive	248	-	-	1	6	5	92	52	-	404
Building	297	1	4	1	-	-	137	24	-	464
Business & secretarial studies*	359	140	180	104	65	32	273	172	70	1395
Clothing and textiles	193	13	6	11	-	-	314	202	-	749
Electrical & electronic	49	-	-	-	-	-	202	-	-	251
Engineering trades	175	4	14	-	4	10	447	96	-	750
Hairdressing & beauty studies	-	7	12	21	4	1	-	-	210	255
Hospitality*	144	3	3	1	-	-	225	17	103	496
Language	31	-	-	-	-	-	-	-	7	38
Music	-	-	-	-	-	-	-	-	14	14
Surveying	-	-	-	-	-	-	29	-	-	29
SUB-TOTAL	1844	172	232	164	88	53	1987	621	621	5782
ACCESS AND PREPARATORY										
Aboriginal education	-	13	4	2	-	-	-	21	-	40
Adult literacy & numeracy	-	10	16	4	3	13	12	7	23	88
Adult matriculation	10	-	-	-	-	-	-	-	-	10
Migrant education	20	9	39	-	-	1	-	-	203	272
Participation and equity*	311	2	-	36	23	2	357	72	-	803
Prisoner education	-	-	-	1	-	45	-	-	-	46
Other access	31	50	48	151	1	1	26	260	117	685
SUB-TOTAL	372	84	107	194	27	62	395	360	343	1944
TOTAL	2216	256	339	358	115	115	2382	981	964	7726

* Full-time enrolments included in the above.

Sunraysia College of TAFE

Agriculture and Horticulture	18
Business Studies	38
Hospitality	5
Transition Education	111

Sources: Broken Hill College of TAFE (nd)
Sixsmith (1985)
Seidel (1985)
Loddon-Mallee Regional TAFE Board (1985)

A.2 Courses for residential students

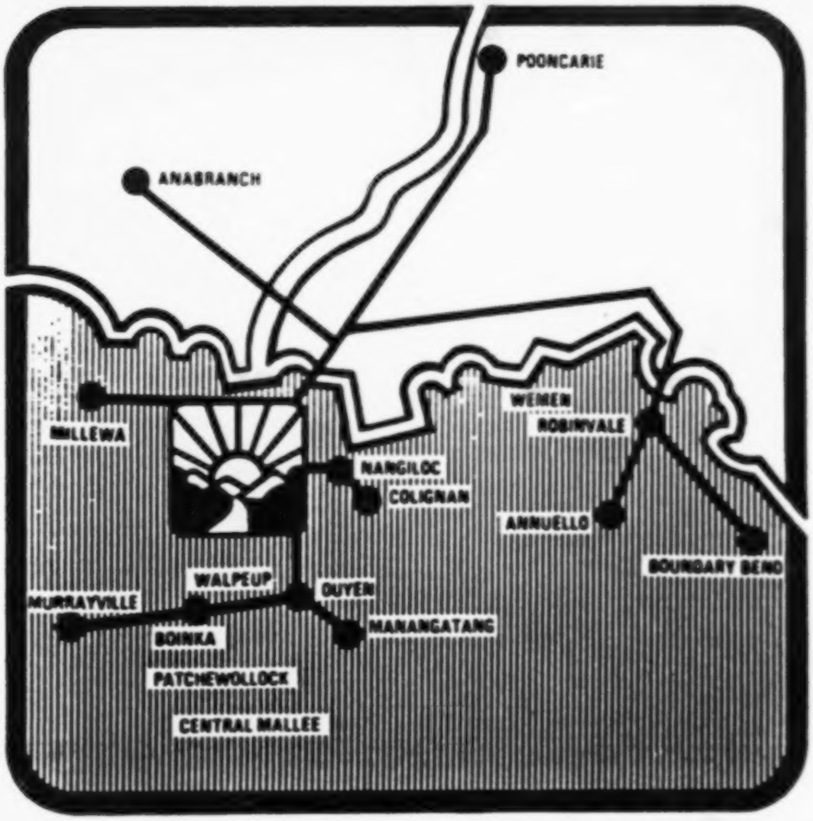
Sunraysia College of TAFE does not organise courses specifically for residential students. Rather the residence is available to students who need to live away from home to undertake courses offered in the normal Sunraysia programme. For example, Fox (1986) reported that apprentices living in Robinvale stayed in the residence while studying at Sunraysia.

A.3 Courses at branch locations of the four colleges

A.3.1 Sunraysia College of TAFE

Sunraysia College of TAFE conducts courses in centres away from the college in both north-western Victoria and far-western New South Wales (Map A1). There is a college coordinator who works with local committees, which consist of local people, and, which have been established in each of these centres. The committees assist the college to ascertain the TAFE needs of each area, to establish courses and to recommend programmes (Lyons, 1985).

AREA COVERED BY SUNRAYSIA T.A.F.E.


POONCARIE
ANABRANCH
MILLEWA
WEMEN
ROBINVALE
NANGILOC
COLIGNAN
ANNUELLO
BOUNDARY BEND
WALPEUP
OUYEN
MURRAYVILLE
MANANGATANG
BOINKA
PATCHEWOLLOCK
CENTRAL MALLEE

MAP A1

In addition each centre has a local contact person (outreach officer).

a) Swan Hill

Swan Hill campus of the Sunraysia College conducts a wide range of Stream 2-6 programmes.

i) Agriculture

A Certificate in Woolclassing and apprentice courses in farming (cropping) are offered. There are also courses in shearing appreciation and farm welding.

ii) Automotive and farm mechanics

Apprentice courses for motor mechanics are offered.

iii) Building studies

Carpentry and joinery apprentice courses and a technical course for building foremen are offered.

iv) Business studies

There is a certificate course offered in business studies as well as a vocational course in typewriting.

v) Engineering

Apprentice courses are offered for electrical mechanics and fitters and turners and in industrial electronics (Curry,1985).

However, it is expected that electrical mechanics apprentices will be directed to the Sunraysia College of TAFE from 1988 onwards (Nice and Lyons, 1984).

b) Boundary Bend

Courses are conducted in the local hall in basic sewing, furniture restoration and farm repairs.

c) Robinvale

Courses are provided in farm welding and maintenance, cooking, typewriting, computing, pottery, floral art and basic sewing.

d) Wemen

The local hall is used for classes in furniture restoration, picture framing, basic sewing, computers, painting/drawing and farm welding and maintenance. (Sunraysia College of TAFE, 1986).

e) Boinka

The local school is used for classes in furniture restoration, computers in farming, owner classer stencil and tractor hydraulics.

f) Murrayville

The Murrayville Hall is used for classes in furniture restoration, home orchard pruning and basic sewing. The mobile workshop from Riverland College of TAFE provides courses in farm mechanics and welding.

g) Patchewollock

The local hall is used for classes for owner-classer stencil, basic sewing, breadmaking and yeast goods, furniture restoration and home orchard pruning.

h) Walpeup

The usual venue is the Walpeup Conference Centre. There are courses in basic sewing.

i) Ana Branch

Generally classes are held in the Ana Branch Hall. Courses include basic sewing, furniture restoration, computers in farming, home orchard pruning, floral art and farm repairs.

j) Pooncarie

The Pooncarie Hall is used for classes in basic sewing, furniture restorations, computers in farming and basic computer programming.

k) Millewa

The Meringur Hall is used for classes in furniture restoration.

l) Nangiloc

Usually classes are held in the primary school or the hall. These include practical typing, microwave cookery, fork lift drivers and basic sewing (Sunraysia College of TAFE, 1986b).

A.3.2 Riverland College of TAFE

a) Renmark Campus

On-campus courses are provided in:

i) Agriculture and Horticulture

Horticultural practice including courses in irrigation, control, budding, grafting, nursery practice, citriculture, viticulture and soil science.

ii) Business and Secretarial Studies

A relatively limited business studies programme including computer studies, secretarial, pre-vocational and Aboriginal education programmes is provided.

iv) Engineering Trades

There is a multi-trade pre-apprentice programme in metal fabrication, fitting and machining and automotive mechanics. Students undertake two of the three options. One local employer (Fielke, 1986) indicated that his firm preferred the graduates of this course for apprenticeship rather than school-leavers.

v) Health and Care

The Health and Care Certificate is offered. This certificate provides successful students with sufficient expertise for employment in either a paid or voluntary capacity, in tasks such as budget advisors, residential care workers, domiciliary care aids, community liaison officers, counsellors, group leaders, consumer consultants, cooks and kitchen hands in caring institutions, school canteen workers, house-keepers, playgroup co-ordinators and those working in community health. (Fricker, 1986).

vi) Performing arts

These include theatre craft, dance, technical theatre and creative writing.

vii) Winery Cellar Procedures Certificate

This course is offered jointly by the Riverland and Sunraysia Colleges of TAFE but is included here because the greater part of the course is offered in winery premises around Renmark. An enrolment of 16 is expected on the basis of the course being offered every other year (Riverland and Sunraysia Colleges of TAFE, 1986).

b) Loxton Campus

i) Agriculture and Horticulture

The Certificate in Farm Practice and the Rural Studies Certificate are offered.

The Loxton campus of the Riverland College of TAFE does not serve students at the East Murray Area School who undertake the Rural Studies Certificate through the external studies service at the Adelaide College of TAFE. The students visit Adelaide to meet the lecturer. The school has a teacher assigned to distance education and this teacher maintains telephone links with the lecturer.

The school has an interesting approach to the practical requirements of the Rural Studies Certificate. When the young people are required on the farm, they stay at home and the work done is logged. The availability of this course under these circumstances is encouraging the students to stay until year 12 (Redden, 1986).

ii) Access programmes for the disabled

There is an activity therapy programme for the education and rehabilitation of disabled persons. These latter courses do not seem to be particularly well known in the Riverland area as Chylinski (1986) expressed a need for them.

iii) A number of general education programmes is offered.

c) Cadell Campus

This campus offers a range of technical courses. Most of these courses are part of the prisoner education programme which is available to both inmates and members of the surrounding community.

d) Waikerie Campus

This campus conducts a number of general education programmes.

A.3.3 Broken Hill College of TAFE

Broken Hill College of TAFE conducts classes in Ivanhoe, Wilcannia, White Cliffs, Tibooburra and Menindee. The courses are designed specifically to meet the needs of these isolated centres. (Broken Hill College of TAFE, nd).

Courses provided include units in the Fashion Retail Certificate, ceramics, typewriting and welding as well as Aboriginal education and Outreach programmes. At Wilcannia, it is planned to run a full-time programme for students who wish to prepare for TAFE certificate entrance. The programme is intended for everyone although it is expected that the students mainly will be Aboriginal (Crawford, 1986).

At Menindee young Aboriginal people are apprenticed to the Public Works Department and are building houses for the local Aboriginal Housing Company. These young people undertake their study at the Broken Hill College of TAFE.

Fowler (1986) expected that the Outreach programme in the far west of New South Wales will have a two-stage role. Initially Outreach, using its flexibility and resources, will determine need and demand and assist mainstream areas to conduct circuit classes. This is intended to lead to the establishment of annexes and eventually individual campuses. This is what has happened at Wilcannia where the facilities there are to become the Wilcannia Campus of the Far West Region of TAFE.

In order to establish this role, Fowler is establishing communication networks by identifying reliable contact people principally from among those who have worked previously in the various centres for Broken Hill College of TAFE. In addition, advertisements are being placed in regional and local newspapers seeking Outreach teachers and community contacts.

Community contacts are to be selected on the basis of their knowledge of their local community and its environs and their understanding of the needs of all members of the community in addition to their ability to communicate at all levels.

A.3.4 Deniliquin Technical College

Deniliquin Technical College conducts circuit (branch) classes in Moulamein, Balranald, Barham, Blighty, Hay, Mathoura, Tooleybuc, Wakool, and Cummeragunja. Courses included fashion, woolclassing, rural welding and typewriting, business and administrative studies and Aboriginal education programmes (Sixsmith, 1985).

The Deniliquin Outreach Project was started in February 1985. The project aims to:

- establish a network of community contacts;
- give priority for courses for the geographically isolated.

A.3.5 Local courses organised by other TAFE providers

The 1984/85 Victorian budget provided for improved opportunities for community-based providers of TAFE to participate in programmes.

Some, but not all, community based providers of TAFE programmes are local advisory committees to the Council of Adult Education. The majority are voluntary organisations all of which receive some administrative support funds and some of which receive some salary funds (Budge, 1986).

Rogers (1985) reported that the provision of programmes by community groups had been the largest growth area in TAFE.

There appears to have been two reasons for this. There has been an upsurge in interest and involvement by the community at large in programmes which cover leisure pursuits, hobbies, educational enrichment and such programmes provide a low key means of access back to education. These have placed pressure on community groups to meet preparatory and semi-vocational needs as, in many places, they are the only organisations available to provide them.

MADEC provides assistance to run workshops or seminars in the Mallee region of Victoria and helps to arrange tutor or lecturers. This programme is specially designed for communities which are disadvantaged because of distance from a regional centre (MADEC, 1985).

In New South Wales the Board of Adult Education provides for fee paying classes for adults. The Riverina is served by the Riverina Evening College while the far west is served through the Broken Hill and District Adult Education Council. Each centre is an accredited adult education agency in its own right. The central funding of the Board subsidises administration and class costs. (Gibbon, 1986).

A.3.6 Branch location enrolments

Table A.4
Branch location enrolments by college
for latest year available

COLLEGE							
SUNRAYSIA 1985		RIVERLAND 1983		BROKEN HILL 1985		DENILIQUIN 1985	
Branch	Enrolment	Branch	Enrolment	Branch	Enrolment	Branch	Enrolment
Anabranch	73	Morgan	40	Ivanhoe	13	Balranald	117
Boinka	87	Ramco	5	Menindee	91	Barham	49
Boundary Bend	46	Kingston OM	8	Tibooburra	25	Blighty	22
Manangatang	17	Moorook	7	Wilcannia	65	Hay	46
Millewa	40	Paringa	20	White Cliffs	44	Mathoura	12
Murrayville	35	Monash	13			Moulamein	54
Nangiloc	114	Glossop	47			Tooleybuc	51
Ouyen	58	Barmera	117			Wakool	36
Patchewollock	47					Dareton	8
Pooncarie	89					Cummeragunja	8
Robinvale	36						
Walpeup	64						
Wemen	16						
TOTAL	722		257		238		403
GRAND TOTAL 1620							

Enrolment figures for Deniliquin do not include Outreach classess. There were 563 enrolments in 1985.

Sources: Seidel (1985); Sixsmith (1986b); Fraser (1986b); Jilbert (1986).

A.4 Course provision by mobile units

In 1985, the Riverland College of TAFE mobile unit provided courses in automotive and diesel mechanics, welding and computer awareness. The locations served were Murrayville (Victoria), Wunkar, Loxton, Waikerie, Willalooka, Berri, Cadell, Pata, Wappilka, Blanchetown, Browns Well, Cadell, East Murray, Overland Corner, Copeville and Glossop (Riverland College of TAFE, 1985).

A.5 Distance education courses

It is estimated that there are about 1000 distance education students in the area. Table A.5 shows the location of such enrolments as could be identified.

Table A.5
Distance education enrolments by college and location, 1985

VTOCN		Adelaide College of TAFE		College of External Studies	
Location	Enrolment	Location	Enrolment	Location	Enrolment
Balranald (NSW)	3	Alawoona	4	Broken Hill	89
Euston (NSW)	7	Barmera	43	Ivanhoe	2
Hattah	2	Berri	43	Menindie	4
Irymple	15	Cadell	40		
Lake Boga	2	Galga	1		
Merbein	16	Glossop	27		
Mildura	160	Halidon	2		
Murrayville	1	Karoonda	28		
Nangiloc	2	Loxton	48		
Nyah West	2	Moorook	4		
Ouyen	11	Morgan	3		
Piangil	1	Paringa	3		
Red Cliffs	22	Ramco	3		
Robinvale	14	Renmark	50		
Sea Lake	5	Waikerie	35		
Swan Hill	53	Wanbi	1		
Tempy	1				
Wentworth (NSW)	10				
Woorinen	1				
Wycheproof	1				
TOTAL	329		335		95

Sources: Reed (1986); Glowik (1986); Fraser (1986a)

A.5.1 Victorian TAFE Off-Campus Network (VTOCN)

A range of some 40 course and 200 subjects are offered by the off-campus mode (distance education). The courses which were available in 1984 are shown in Appendix D.

A.5.2 Adelaide College of TAFE

Many courses (both award and non-award) may be undertaken by external studies. It is departmental policy that, wherever possible, no student should be debarred from study because of inability to attend classes.

Qualifications obtained by external study are identical with those gained through attending classes. The syllabuses are the same in both cases, with students studying externally being provided with learning materials prepared by specialist teachers (Arnold, 1985).

A.5.3 College of External Studies, NSW

The college provides about 120 courses covering 600 subjects (Appendix D). Total enrolments in college courses exceed 30,000.

Qualifications obtained externally are the same as those obtained by attending the same course by classroom instructor. The syllabus followed and the examinations set are the same also (Cavalier, 1985).

Wherever possible external students in New South wales work through local colleges for administration and general support. At Deniliquin College of TAFE, a member of the teaching staff has a small release from teaching to co-ordinate and advise external students. Tutorial sessions may be conducted where a minimum of six students have enrolled in the same course. Colleges also operate as examination centres (Deniliquin College of TAFE, nd).

A.5.4 Community radio in Bourke

Parsons (1986) reported that two courses had been produced so far. These are computer awareness (17 enrolments) and nutrition and family meals (14 enrolments).

A.6 Study Centres

In 1986 there were 74 students enrolled at the Robinson Centre for Higher Education (Murray, 1986), (Mitchell 46, Riverina-Murray 14, New England 14). Tutorials are conducted in subjects in the Graduate Diploma in Educational Studies in Computers in Education from Riverina-Murray CAE and in the Bachelor of Arts in Social Administration of Mitchell CAE.

APPENDIX B: STATISTICAL INFORMATION

Table B1
Population (1981 census) and population projections (1986, 1991, 1996) for local government areas in study area

	1981	1986	1991	1996
VICTORIA				
Mildura City	15740	17170	18930	21520
Mildura Shire	19070	20070	24310	29410
Swan Hill City	8610	8946	9464	10025
Swan Hill Shire	12590	12089	11886	11671
Walpeup	3700	3550	3420	3350
Wycheproof	3900	3596	3450	3361
SUB-TOTAL	63610	65421	71460	79337
SOUTH AUSTRALIA				
Barmera	4160	4486	4830	5103
Berri	6120	6920	7589	8308
Browns Well	400	366	334	302
East Murray Karoonda	1680	1572	1463	1349
Loxton	6950	7259	7594	7872
Morgan	1230	1307	1384	1468
Paringa	1450	1524	1610	1647
Renmark	6870	7247	7687	8094
Waikerie	4540	4612	4711	4765
Unincorporated	240	269	279	289
SUB-TOTAL	33640	35562	37481	39197
NEW SOUTH WALES				
Balranald	2900	3100	3130	3560
Broken Hill	27850	27000	26400	25400
Central Darling	3150	3200	3250	3300
Conargo	1800	1500	1250	1050
Deniliquin	7750	8400	9130	9910
Hay	4050	4000	3950	3900
Murray	4100	4500	5000	5860
Wakool	5200	5200	5620	6150
Wentworth	7100	7800	7390	7870
Windouran	550	500	450	400
Unicorporated	1400	1300	1200	1100
SUB-TOTAL	65850	67500	66970	65300
TOTAL	166080	168483	175921	183834

Sources. ABS (1981) (1985) (1985b); Wolinski (1985); S.A. Department of Evironment and Planning. Seidel (1985); New South Wales Population Projections Group (1985); Turner et al (1983); Inhouse estimates based on established figures.

Table B2

Population over 15 years of age (1981 census) by age by local government area for the region

VICTORIA

AGE LAST BIRTHDAY (YEARS)

LOCAL GOVERNMENT AREA	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	≥ 75	TOTAL
Mildura City	1416	1440	1287	1260	1043	889	878	987	962	842	846	679	1059	13588
Mildura Shire	1881	1704	1550	1676	1391	1431	1337	1235	1068	724	640	473	585	15695
Swan Hill City	822	767	719	626	556	428	406	422	421	365	353	312	512	6709
Swan Hill Shire	1231	949	966	1039	860	775	754	790	731	516	426	730	363	10130
Walpeup	285	290	279	274	247	204	168	196	165	152	135	104	154	2653
Wycheproof	355	304	244	258	192	246	227	198	172	136	115	105	181	2733
SUB-TOTAL	5990	5454	5045	5133	4289	3973	3770	3828	3519	2735	2515	2403	2854	51508

SOUTH AUSTRALIA

AGE LAST BIRTHDAY (YEARS)

LOCAL GOVERNMENT AREA	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	≥ 75	TOTAL
Barmera	350	362	367	293	235	209	208	265	265	171	145	103	157	3140
Berri	544	506	519	571	352	385	328	336	302	237	200	159	146	4585
Brownes Well	45	28	25	32	28	32	20	16	9	11	9	4	8	257
Karoonda-East Murray	134	141	134	156	86	87	98	83	88	52	51	40	41	1191
Loxton	616	543	537	555	484	405	287	342	383	328	231	145	212	5068
Morgan	116	95	82	80	78	82	95	75	74	74	46	54	34	985
Paringa	130	106	109	115	115	92	78	75	73	44	45	28	21	1031
Renmark	611	550	577	507	397	403	370	391	371	274	283	188	181	5103
Waikerie	381	358	360	362	322	218	235	249	242	205	166	119	155	3372
Unincorporated	23	24	22	20	19	14	6	12	11	6	4	-	1	162
SUB-TOTAL	2950	2713	2732	2691	2116	1927	1725	1844	1818	1402	1180	840	956	24894

Source: ABS (1984)

NEW SOUTH WALES

AGE LAST BIRTHDAY (YEARS)

LOCAL GOVERNMENT AREA	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	≥ 75	TOTAL
Balranald	250	280	260	220	140	140	130	160	120	110	90	60	80	2040
Broken Hill	2450	2620	2300	2100	1530	1390	1380	1650	1460	1290	1210	920	1030	21330
Central Darling	280	340	300	220	200	170	140	180	150	110	80	50	40	2260
Conargo	160	130	140	110	150	140	90	100	90	60	40	20	20	1250
Deniliquin	650	690	660	600	410	440	370	440	360	320	300	230	270	5740
Hay	370	360	320	300	230	240	260	190	170	160	150	100	160	3010
Murray	320	340	270	320	270	250	230	200	190	190	160	100	90	2930
Wakool	450	460	400	380	300	310	260	290	280	210	180	110	140	3770
Wentworth	660	580	530	570	490	420	350	380	320	270	170	160	180	5080
Windouran	50	40	40	30	40	30	30	30	20	20	20	20	20	390
Unincorporated	90	140	120	130	120	80	70	70	60	60	30	20	20	1010
SUB-TOTAL	5730	5980	5340	4980	3880	3610	3310	3690	3220	2800	2430	1790	2050	48810
TOTAL	14670	14147	13117	12804	10285	9510	8805	9362	8557	6937	6125	5033	5860	125212

Sources: ABS (1981a); ABS (1981b); ABS (1984)

Table B3

Unemployed persons awaiting placement as at end of September 1985 by employment district in study area

EMPLOYMENT DISTRICTS	TOTAL	MALES	FEMALES	15-19 YEARS	20-24 YEARS	25-44 YEARS	45+ YEARS
Broken Hill	1938	1143	795	482	527	731	198
Deniliquin	704	458	246	163	183	259	97
Mildura	2674	1943	731	585	655	1014	420
Renmark	2123	1606	517	447	588	824	264
Swan Hill	1724	1202	522	436	460	616	212
TOTAL	9163	6352	2811	2113	2413	3444	1191

Source: CES (1985)

Table B4

Occupations of employed population by local government area

Census 1981

VICTORIA

Occupations

Local Government Area	Professional Technical	Adminis-trative	Clerical	Sales	Farmers etc.	Mines etc.	Transport etc.	Tradesmen etc.	Service, Sport, Recreation	Armed Services	Inadequately Described	TOTAL
Mildura City	945	338	972	836	429	2	304	1356	780	8	524	6494
Mildura Shire	672	169	729	588	2980	10	279	1566	512	6	758	8269
Swan Hill City	485	160	532	482	204	2	174	744	402	-	190	3375
Swan Hill Shire	379	119	371	314	2431	11	197	751	278	2	478	5331
Walpeup	142	40	110	88	892	3	63	178	117	2	107	1742
Wycheproof	149	53	108	105	827	3	64	199	99	-	166	1773
SUB-TOTAL:	2772	879	2822	2413	7763	31	1081	4794	2188	18	2223	26984

Occupations

Local Government Area	Professional Technical	Adminis-trative	Clerical	Sales	Farmers etc.	Mines etc.	Transport etc.	Tradesmen etc.	Service, Sport, Recreation	Armed Services	Inadequately Described	TOTAL
Barmera	163	82	182	120	455	-	65	435	133	2	114	1751
Berri	319	162	303	178	481	-	108	826	212	6	175	2770
Browns Well	10	4	3	6	127	-	6	2	4	-	23	185
Karoonda - East Murray	55	18	35	20	479	-	37	70	27	-	99	840
Lameroo	77	30	42	40	404	-	30	78	30	2	80	813
Loxton	284	136	223	218	1096	-	88	622	170	4	204	3045
Morgan	35	18	33	18	254	-	34	86	45	-	33	556
Paringa	48	34	59	36	310	-	23	115	24	-	59	708
Pinnaroo	48	45	41	46	305	-	27	74	39	2	56	683
Renmark	280	181	302	184	808	3	93	656	229	5	201	2942
Waikerie	173	88	133	131	1008	-	68	306	118	3	93	2121
SUB-TOTAL:	1492	798	1356	997	5727	3	579	3270	1031	24	1137	16414

Source: ABS (1981a)

Occupations

Local Government Area	Professional Technical	Adminis-trative	Clerical	Sales	Farmers etc.	Mines etc.	Transport etc.	Tradesmen etc.	Service, Sport, Recreation	Armed Services	Inadequately Described	TOTAL
Balranald	67	31	80	73	470	2	58	165	105	-	168	1219
Broken Hill	1327	327	1160	834	132	1904	499	2619	977	7	653	10439
Central Darling	119	42	78	56	492	12	104	235	112	-	149	1399
Conargo	29	6	21	17	706	-	12	57	29	-	78	955
Deniliquin	398	131	451	359	259	-	139	855	327	2	272	3193
Hay	148	78	180	131	444	2	97	284	191	-	177	1732
Murray	109	71	122	108	701	_	67	276	137	_	105	1696
Wakool	137	44	132	85	1134	4	75	330	145	2	246	2334
Wentworth	242	77	232	153	1316	_	97	445	237	_	241	3040
Windouran	7	-	9	6	211	-	-	16	10	-	26	285
Unincorporated	42	16	20	19	479	6	23	63	41	-	86	795
SUB-TOTAL:	2625	823	2485	1841	6344	1930	1171	5345	2311	11	2201	27087
TOTAL:	6889	2500	6663	5251	19834	1964	2831	13409	5530	53	5561	70485

Table B5

Industries of employed population by local government area census 1981

Industry

Local Government Area	Agr.	Mining	Manuf.	Elect. Gas Water	Constr.	Whole-sale Retail	Trans-port Storage	Commun.	Finance Property Bus. Serv.	Public Admin. Defence	Commu-nity Service	Recrea-tional Personal	Not Classified	TOTAL
Mildura City	375	11	435	109	416	1607	283	122	417	261	1266	587	600	6489
Mildura Shire	2898	22	520	146	456	1404	199	91	243	227	885	340	842	8273
Swan Hill City	189	7	170	65	231	901	162	82	250	166	630	293	228	3374
Swan Hill Shire	2460	24	171	81	217	674	180	56	144	125	493	189	514	5328
Walpeup	897	2	14	33	63	176	88	19	32	31	237	54	104	1750
Wycheproof	833	6	22	26	46	206	56	32	42	57	213	59	178	1776
SUB-TOTAL:	7652	72	1332	460	1429	4968	968	402	1128	867	3724	1522	2466	26990

Industry

Local Government Area	Agr.	Mining	Manuf.	Elect. Gas Water	Constr.	Whole-sale Retail	Trans-port Storage	Commun.	Finance Property Bus. Serv.	Public Admin. Defence	Commu-nity Service	Recrea-tional Personal	Not Classified	TOTAL
Barmera	436	2	226	86	91	280	40	21	63	43	204	123	136	1751
Berri	456	2	619	183	141	421	56	21	97	90	330	157	197	2770
Browns Well	125	-	-	-	-	13	-	2	2	3	12	-	24	181
Karoonda - East Murray	487	-	4	2	32	56	38	13	10	15	83	10	92	842
Lameroo	403	-	3	8	27	91	21	18	24	18	92	18	87	810
Loxton	1059	5	221	88	126	528	72	25	81	67	389	138	247	3046
Morgan	239	-	11	21	13	88	29	13	3	12	73	15	40	557
Paringa	322	-	55	16	35	85	11	2	9	10	56	32	75	708
Pinnaroo	296	-	23	6	23	110	16	15	18	17	74	20	63	681
Renmark	769	2	395	51	121	556	75	32	128	59	335	198	221	2942
Waikerie	928	2	55	67	75	418	61	20	50	50	218	75	104	2123
SUB-TOTAL:	5520	13	1612	528	684	2646	419	182	485	384	1866	786	1286	16411

Industry

Local Government Area	Agr.	Mining	Manuf.	Elect. Gas Water	Constr.	Whole-sale Retail	Trans-port Storage	Commun.	Finance Property Bus. Serv.	Public Admin. Defence	Commu-nity Service	Recrea-tional Personal	Not Classified	TOTAL
Balranald	481	-	35	26	54	140	35	28	25	40	92	83	179	1218
Broken Hill	77	3830	221	344	451	1450	355	147	423	377	1460	611	693	10439
Central Darling	533	14	19	42	97	94	122	33	17	41	171	64	151	1398
Conargo	732	-	19	2	19	43	9	4	4	8	31	8	77	956
Deniliquin	264	2	292	161	272	628	112	65	246	144	504	205	299	3194
Hay	463	-	29	25	177	269	54	51	71	86	196	123	186	1730
Murray	724	4	108	19	82	205	70	15	56	52	148	120	99	1702
Wakool	1170	2	71	101	68	178	86	18	43	78	168	118	233	2334
Wentworth	1292	3	69	80	148	379	74	25	92	87	334	194	266	3043
Windouran	224	-	2	-	6	5	-	2	2	5	6	4	27	283
Unincorporated	495	15	3	8	33	23	4	5	6	15	43	51	91	792
SUB-TOTAL:	6455	3870	868	808	1407	3414	921	393	985	933	3153	1581	2301	27089
TOTAL:	19627	3955	3812	1796	3520	11028	2308	977	2598	2184	8743	3889	6053	70490

Source: ABS (1981a)

APPENDIX C: SOME POSSIBILITIES FOR TELE-EDUCATION WITH EQUIPMENT REQUIRED FOR NETWORKING

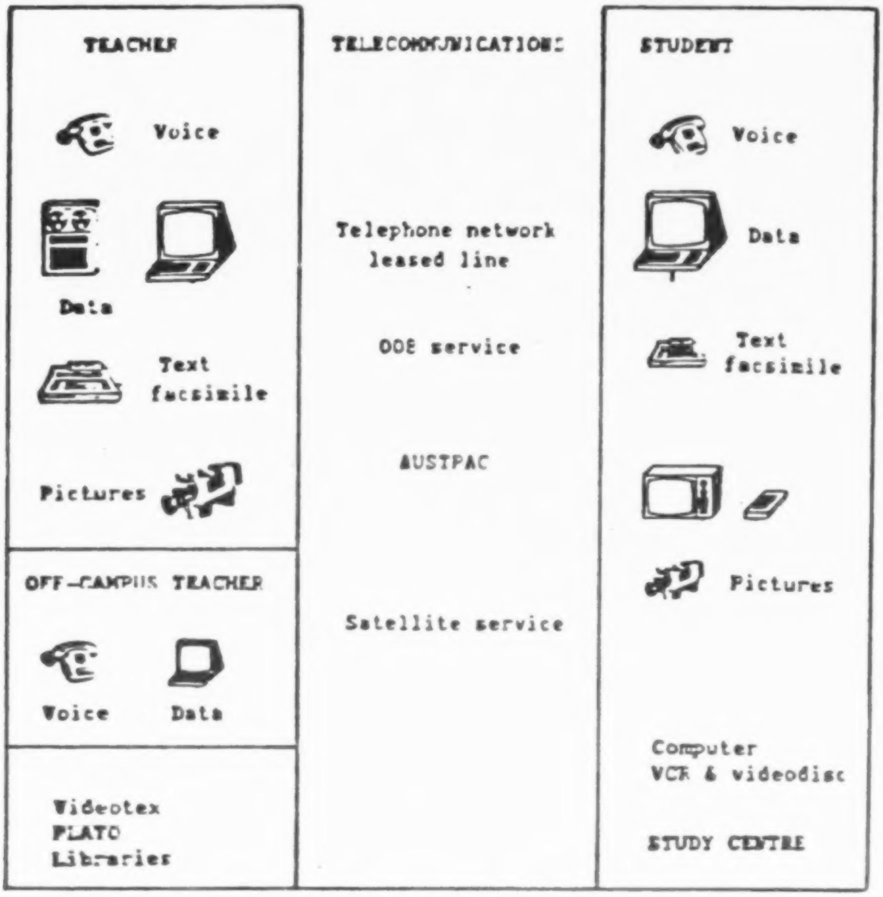

TEACHER
Voice
Data
Text facsimile
Pictures
OFF-CAMPUS TEACHER
Voice
Data
Videotex
PLATO
Libraries
TELECOMMUNICATIONS
Telephone network
leased line
DOE service
AUSTPAC
Satellite service
STUDENT
Voice
Data
Text facsimile
Pictures
Computer
VCR & videodisc
STUDY CENTRE

Table C1

A three-level networking model

Source: Cox (1984)

Resource base

- CAI/CML software
- computer(s)
- computer network access
- data banks
- common videotex information provider
- access via AUSSAT
- TV/radio transmit/receive
- wordprocessing/electronic mail/facsimile
- access to library information services
- telephone and conferencing bridge

Resource and communication Node

- computer
- computer network access
- storage facilities
- common videotex receive status
- access to AUSSAT
- word processing/electronic mail/facsimile
- radio/TV reception
- audio/video cassette recording, copying and playback facilities
- on-line and offset printing

Sub-node or individual user

- personal computer
- audio/video cassette replay
- TV/radio reception
- telephone

APPENDIX D

COURSES AVAILABLE THROUGH EXTERNAL STUDIES

VICTORIAN OFF-CAMPUS NETWORK COURSES

Preparatory Course

Basic English
Preliminary Subjects
Preparatory Trade Subjects
Year 11 Programme (Leaving Technical Subjects)
Higher School Certificate
Help Yourself to Spell

Middle Level Courses

Certificate of Applied Science (Conservation & Resource Development)
Certificate of Applied Social Science (Library Technician)
Certificate of Business Studies - Accounting
Certificate of Business Studies - Advertising
Certificate of Business Studies - Banking
Certificate of Business Studies - Building Societies
Certificate of Business Studies - General
Certificate of Business Studies - Hospital Administration
Certificate of Business Studies - Law
Certificate of Business Studies - Production
Certificate of Business Studies - Real Estate
Certificate of Business Studies - Safety
Certificate of Business Studies - Sales & Marketing
Certificate of Business Studies - Supply
Certificate of Business Studies - Timber
Certificate of Technology (Electronics)
Certificate of Technology (Electrical)
Certificate of Technology (Building Surveyor)
Quarry Supervisor's Certificate
Timber Operations Certificate

Post-Apprentice Trades Courses

Post Trade Industrial Electronics
Technician Certificate - Building Inspector
Technician Certificate - Building Foreman

Non-Apprentice Course

Boiler Attendant
Concrete Technology
Electronics Mechanic (Broadcasting)
Farm Studies
Law Enforcement Studies
Navigation for Yachtsmen
Planning and Starting a Small Business
Pulping and Papermaking
Road Foreman and Municipal Works Superintendent
Shorthand for Beginners
Skills of Dictation
Supervision Certificate
35mm Motion Picture Projection
Typewriting
Steam Engine Driving
Television Servicing
Weights and Measures Inspector

COLLEGE OF EXTERNAL STUDIES, NSW

COURSES

Applied Electricity

- Automotive electrician TC Stage 1
- Electrical fitter-mechanics TC Stage 111
- Electrical wiring refresher
- Overhead linesmen
- Electrical trades

Applied Science

- Health inspection

Biological Sciences

- Dental assistants
- Environmental management

Building

- Basic drafting for police officers
- Builder's business
- Building construction
- Building foreman and clerk of works
- Explosives
- Showcard and ticketwriting
- Wood technology

Business and Administration

- Accounting
- Ambulance superintendent
- Auctioneers or Stock and station agents
- Banking
- Bookkeeping
- Commerce
- Commercial correspondence
- Commercial shipping practice
- Company secretarial practice
- Cost accountancy
- Credit managers
- Data processing concepts
- Establishing the small business
- First line management for health care staff
- Insurance
- Introductory management accounting
- Medical record clerks
- Motor transport clerical officers English
- Public administration
- Real estate
- Safety - basis
- Supervision in action
- Valuation (old)
- Valuation (new)

Civil Engineering

- Civil engineering
- Fire engineering
- Land and engineering survey drafting
- Surveying (new)
- Water resources

Electrical Engineering

- Electrical engineering (new) Stages 1 and 11 and Stage 111
- Electronics engineering (new) Stages 1 and 11

Fashion

- Dressmaking
- Millinery

Food

- Bread manufacture
- Catering supervisors
- Meat inspection

General Studies

- Certificate entrance (School Certificate Level)
- Diploma entrance (matriculation level)
- Education and training of the handicapped
- Freelance journalism
- Post-secondary study skills
- Preparatory arithmetic
- Preparatory English
- Short story writing
- Special English

Hairdressing

- Ladies' hairdressing Stages 1 and 11
- Skin and hair growth
- Trade science for senior ladies' hairdressers

Mechanical Engineering

- Diesel engine operation
- Mechanical engineering
- Refrigeration plant operation
- Steam boiler attendants
- Steam engine operation

Plumbing and Sheetmetal

- Draining
- Journeyman plumbers licensing
- Liquefied petroleum gas installers
- Liquefied petroleum gas installers (restricted)
- Plumbers business principles
- Plumbing advanced
- Water plumbing

Rural Studies

- Agriculture
- Beekeeping
- Buttermaking
- Care of the horse
- Care of the house cow
- Cheesemaking
- Dairy farming
- Dairy technology
- Farm and station bookkeeping
- Farm management and farm economics
- Farm mechanics
- Greenkeeping
- Handling, storage and inspection of grain
- Husbandry of farm animals
- Pest control
- Pig raising
- Poultry farming
- Shearing shed management and bookkeeping
- Sheep and wool
- Weed control practice
- Wool testing

Secretarial Studies

- Gregg shorthand
- Introduction to shorthand speed (Pitman)
- Introduction to shorthand speed (Gregg)
- Machine transcription
- Medical receptionist
- Pitman shorthand - new era (new course)
- Pitman shorthand - new era (instructors)
- Pitmanscript
- Reception duties
- Shorthand instructors (Pitman new era)
- Typewriting
- Typing instructors

Teacher Training

- Principles and techniques of teaching for part-time technical teachers, oral and external strands

CERTIFICATE ENTRANCE (School Certificate Level) SUBJECTS

Stage 1

- English
- Geography
- Mathematics
- Science

Stage 11

- English
- Geography
- History
- Mathematics
- Science

DIPLOMA ENTRANCE (matriculation) SUBJECTS

Stage 1

Agriculture: 2 unit
Ancient history: 2 unit
Art: 2 unit

Biology: 2 unit
Chemistry: 2 unit
Economics: 2 unit
English: 2 unit
English: 2 unit, General
French: 2 unit
French: 2 unit Z
General science: 2 unit
Geography: 2 unit
Geology: 2 unit
German: 2 unit
German: 2 unit Z
Home science: 2 unit
Indonesian: 2 unit Z
Italian: 2 unit
Japanese: 2 unit
Mathematics: 2 unit
Mathematics: 3 unit
Mathematics in society: 2 unit
Modern Greek: 2 unit
Modern history: 2 unit
Multi-strand science: 4 unit
Physics: 2 unit
Russian: 2 unit
Russian: 2 unit Z
Spanish: 2 unit
Textiles and design: 2 unit

Stage 11

Agriculture: 2 unit
Ancient history: 2 unit
Art: 2 unit
Biology: 2 unit
Chemistry: 2 unit
Economics: 2 unit
English: 2 unit
English: 3 unit
English: 2 unit, General
French: 2 unit
French: 2 unit Z
General science: 2 unit
Geography: 2 unit
Geology: 2 unit
German: 2 unit
German: 2 unit Z
Home science: 2 unit
Indonesian: 2 unit Z
Italian: 2 unit
Mathematics: 2 unit
Mathematics: 3 unit
Mathematics in society: 2 unit
Modern Greek: 2 unit
Modern Greek: 3 unit
Modern history: 2 unit
Multi-strand science: 4 unit
Physics: 2 unit
Russian: 2 unit
Spanish: 2 unit
Textiles and design: 2 unit

APPENDIX E: STATEMENT OF DUTIES - EDUCATION OFFICER (RADIO)

Distance Education and Communication Project

Aims of the project

1. To develop appropriate distance learning packages for the small isolated communities of the Orana Region.

2. To increase the range of Orana Community College courses.

3. To develop Distance Education Skills among existing teachers in the region.

Statement of duties

1. Identify, assess and develop existing resources and program material.

2. Identify new areas for program development keeping an emphasis on good broadcasting as well as educational considerations.

3. Develop the mode of delivery of distance learning packages, preferably combining broadcasting with face to face involvement and any other appropriate technology.

4. Recruit and motivate TAFE teachers for programs then either train or access training in broadcasting and other skills as required.

5. Facilitate delivery of programs.

6. Assess and report at the end of the project.

The qualities of the radio educator

Essential:

Experience in adult education, experience in Radio Broadcasting, a proven ability to motivate individuals and/or groups, administrative and organisational ability.

Desirable:

An appreciation of what constitutes good programming in radio, radio production skills, experience in educational research development and assessment.

APPENDIX F: NORTHERN TERRITORY EXTERNAL STUDIES CENTRE

Recurrent costs

Staff salaries		
Co-ordinator	$40 000	
Lecturer	$30 000	
Tutor-counsellor	$25 000	
Examinations officer (part-time)	$10 000	
Administrative officer (part-time)	$16 000	
Total staff salaries		$121 000
Student support services		
Funds for part-time tutors (Approximately 30 tutors are employed as required)	$25 000	
Staff for residential schools	$ 6 000	
Library (Contribution to library of DIT for acquisitions and supplement to salary of extension officer)	$15 000	
Total student services		$ 46 000
Administration		$ 4 000
Travel (intra-state and conference)		$ 5 000
Telecommunications (hardware and software)		$ 5 000
Total		$181 000

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